Animation short: Mechanical Chef

Memory

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Dedication

To Xavier, Carme and Eulàlia, that are given me the opportunity to study what I like.
Gratitude

To my teacher David Minguellon, who helps me every time that I had some problem during the Mechanical Chef creation. To my classmates, for their opinion and advices who made my work better. To Jordí Giró, for their involvement in the preproduction phase, helping my doing some drawings. To Gllndŵr university and Escola Universitària Politécnica de Mataró to give all the necessary utilities to make this project real. Thanks.
Resumen

Mechanical Chef nace de la idea de aprender y saber más acerca de Maya y otros programas 3D. Para ello, decido crear un increíble y divertida historia para todos los públicos con el fin de pasar un buen rato y reír un poco. Incluyo diferentes escenarios y personajes para aprender todas las áreas posibles del Maya y tratar de sacar lo mejor de mi. Me gustaría crear un mundo imaginario de la nada, mi mejor reto hasta hoy. Ahora, me siento muy orgulloso con el resultado. La historia es entretenida, la calidad de la animación 3D es buena, el ritmo visual es continuo, y el acompañamiento musical perfecto en todo el corto. Estoy contento porque no me podía imaginar esto cuando empecé a trabajar en Mechanical Chef.

Abstract

Mechanical Chef born from the idea to learn and know more about Maya and another 3D programs. To do this, I decide to create an incredible and amusing animation short for all the publics in order to pass a good time and laugh a little. I include different sets and characters for learn all the Maya areas and try to take the best of my. I would like to create and imaginary world from nothing, my best challenger until nowadays. Now, I am very proud with the result. The story is entertaining, the 3D animation quality is good, the visual rhythm is continue, and the music accompaniment perfect all the short. I am happy because I could not imagine this when I started to work in Mechanical Chef.
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Glossary of Terms.

3Dmax – Adobe 3D study Max.

AE – Adobe after effects.

EUPMT - Escola Universitària Politècnica de Mataró

BFTV – Benfo television.
1. Objectives.

1.1 Purpose.

Think, development and create an amusing 3D animation short using 3D software like Maya, After effects and Photoshop.

1.2 Finality.

Put all my effort doing this short in order to pass a good time watching it, Make the spectators part of the history, identifying it with the characters and enjoying the final product.

1.3 Object.

Mechanical Chef, the 3D animation result, and one complete memory to see all the interesting creation process, Until the first draw to the final video.

1.4 Scope.

Mechanical chef is a six minutes 3D short animation story thinking for all the publics in order to pass a good laughing time. I have not limits in my project, I have not references or previous works, all the limits are my imagination and my skills to use Maya software. Does not mother your age, in one hand, it has some funny moments, and in the other hand has a deep story behind the scenes. The intention is arrive to all the audience, expand my product, and use it how my online presentation for the professional audiovisuals companies.
2. Intro.

Since I have started the graduated in Audiovisuals and Multimedia in Mataró I have never been sure about that this world will be my future. At the beginning was really complicated, I was admitted in the second round and I had not convinced at all about the decision. Therefore, I decided to start the adventure in an small college, because the Tecnocampus have not existed yet.

Quickly, I understand that I have talent and I like it a lot. I remember the first subject, when the teacher made groups about five or six people, gave one camera for group, and said that we had to do a short. It was my first time that I take a camera and I do not leave it since today.

But this was only the beginning, on my second year, the EUPMT move all the material and the graduate to the Tecnocampus, a new amazing modern installation close to the sea. News computers, new material, new classrooms and the most important think for me, news professors. In this moment the graduate have me hold.

The best point arrive with my first animation subject using 3DMax, I have never used 3D, but I have been a Disney, Pixar and Dreamworks fanatic during all my life and I was expecting a lot this moment, start to work with 3D. Really, my suspicious was approve. I loved it instantly.

Until this moment, I decided that my future was in the 3D or the special effects, and I decided to start to learn in my own way making tutorials and extra hours.

Another amazing situation was in the thirds course, when I meet David Minguillon, a young revolutionary teacher who knows the best forms to teach us in Maya, another 3D software that I like more than 3dMax. In this moment I saw that subjects like television, publicity, business, commercial, etc. did not sense for my. I would like to be 3D animator.

For all of this, I decided to do my final work in an animation, in order to create and amazing animation short and learn and know more about Maya and 3D software like AE or Real Flow. I enjoy doing this, and I think this is the most important when you make a personal decision.
3. Preproduction.

The Preproduction is the process of preparing all the elements involved in the film. Is the time to create and put in order all the information to work without anyone setback during the production phase.

For my, was the least important part during all this years working in the university, is true that I used it sometimes to have references but I have never took it seriously, I had done it because I must to do it, to approve the subject, nothing more.

With this new challenger, how is “Mechanical Chef” all that I thought about the preproduction phase change completely. Now, I think that is the most important part of the process in the 3D world, where it rewards efficiency before effectiveness, because one error can be mortal and can make you lose a lot of precious time repeating and rendering again losing hours and days than you could be use to improve another thinks.

For this, now, I understand that the preproduction work is the solution for no fail in the production process, accordingly, work better and save a lot of headache.

The animation preproduction process is very similar to a film; thinking in the idea, develop the story, make the plot, characterize your characters, broke down the script in scenes, identify locations, props, cast members, costumes, special effects and visual effects, draw the storyboard with annotations and finally, compose the animatic. If you do all of this in the best way possible the production process will be easier.

Enhanced the preproduction phase, is time to show you all my process, the chapters are organized in order that I created my final work, starting for the title, and finishing in the animatic.
3.1. Title.

The definition says that the title is the word or phrase that discloses the name or subject of a book, document, film, music, video game, animation, etc.

The title is one of the best parts in a commercial product, I can not start to work in something without know the provisional or definitive one. I am a little stubborn in this, but really, I can not work happy and calm until I got it. For that reason, Is my first point in the preproduction process.

I know that you can not put a title if you do not develop a little bit the plot or the story, because you can not put title to nothing, but as soon as I have the main idea I start to work on it.

At the beginning my short was called “Crazy Chef”, but during the development of the short, and when I had more clear the final plot, I decide to rename it to “Mechanical Chef”, the final title.

In the first picture you can see the initial graphic title “Crazy chef”, is not bad, but when I decide to changed it fourths mounts later, I know more about Photoshoop and creative process, and I did the new one better and more accurate. You can see it in the second picture. It was easy to think the idea, I searched for something to combine mechanical and cooking visions, for this I decide to change the letters for mechanical objects and then use some decorative kitchen utilities.
3.2 Characters.

Develop my characters is one of the most important think until start to create my story, I can not start with the final plot without know all your characters perfectly. For this, I spent a lot of time thinking in their physic and emotional aspect.

Then, I show you all the files that make for each other.

3.2.1 Bubby Fironi.

3.2.1.1 Description.

Bubby is the Ronald Fironi soon, the best chef in France. He would like to be mechanic, his passion and love, but he must be obligated to follow their family business. For that, he is not happy, but he knows that his father frighted a lot for all of this and decide to accept the contract. He is bound to work in the kitchen and the most important think, work in the TV.

Role: Main character

Age: 20

Gender: Male

Height: 1,80

Weight: 70

3.2.1.2 Personality.

Bubby born to be mechanic, not chef, is clumsy with delicate things, is dirty, unkempt and impatient. However, he has an outgoing character and vaguely, the perfect mix to not cook.

The only good thing is his gift for talking and laughing with people. He is very friendly and is very easy to connect with him and make relationships. He have never been angry and always take the life as a joke. Respects the physical, is a person with a sportsmen body. Measuring 1.80, brown hair, green eyes and no facial hair because is annoying to work in the garage. To represent his passion for the mechanical, he brings one gear earring in his right ear.
3.2.1.3 Relationships.

How I said before Bubby is the Ronald Fironi soon, actually, their relationship is a little stressed and no the best possible. Bubby is angry because he want to be a mechanic and their father obligate him to be a Chef and appear in his famous TV program, “the Fironi show”. But in the other hand, Bubby knows all the work that their family done for grow up the business and accept the contract.

The relation with the other people who appear in the short is only professional.

3.2.1.4. Character design.

To understand my character and somethings that he will do in my short is important to create the inside of the story.

Son of a renowned family, Bubby is a boy who have lived in a very small town since he was young. He have ever lived comfortably at home, He have never missed anything and he always had what he wanted.

His father, who had hard childhood, decided to create a restaurant because he only known cooking, and there was the last change to get some money and give a good life to his soon. He is a really specialist cooker and he was taking name quickly, also, his restaurant was recognized whit awards and Michelin stars. Today is one of the most famous chef in France and the restaurant one of the best in the world. Also, he has a daily television program where teaches how to cook some of the best dishes in the world.

In summary, our chef has always lived well, rich and doing what he wanted without working. But now, somethings will change, his father is old and is time to give some opportunities to the new generations, is time for Bubby to learnt all the business to follow with it.

Bubby do not want learn anything about the kitchen, he like mechanical thinks and numbers, but at finally he must to accept.

After one month of work, his father decide that is time to Bubby to make his first TV show. At the beginning, all the thinks will be wrong, but then and thanks to the mechanical knowledge, Bubby will be success and famous!
3.2.1.5. Character view.

Fig. 3.3 Complete Bubby draw.
3.2.1.6. Character View.

Fig. 3.4 Bubby front, back and profile.

3.2.1.7. Secondary dress colors.

Fig. 3.5 Bubby kitchen dress color.
3.2.1.8. Colors Sheet.

Fig. 3.6 Bubby color sheet.
3.2.1.9. All Views.

Fig. 3.6 Bubby all views.

3.2.1.10 Clarifications.

Bubby will start with a normal chef dress, but in the middle of the short when he decides to do a mechanical meal, he change his chef dress for de mechanic one.

We can see his affliction for the mechanic in his gear piercing, the orange shoes, his green workshop cup and the mechanic apron.

Fig. 3.7 Bubby mechanical complements.
3.2.1.11. Character and expressions.

Fig. 3.8 Facial expressions.
3.2.2 Ronald Fironi.

3.2.2.1. Description.

Ronald Fironi is a secondary character in the mechanical chef story, is the Bubby father, and he has to do the strong role in the short. Is the head, the businessman, who know the hard live and give value to all the thinks.

If we have to define in one phrase the character, will be: “from nothing to everything”, “from poverty to riches”, the work and constancy for survive had been made that at final Ronald had been had luck and had been bought this empire.

Now is the best Chef in France and his restaurant one of the best in the world.

Role: Secondary character

Age: 53

Gender: Male

Height: 1,90

Weight: 102kg

3.2.2.2. Personality.

Ronald is a strong person with a reinforced mentality for their hard childhood, is not the person that like jokes in the work. If he has not time to sleep because he has to finish a job, he will not sleep.

Is a French patriotic, lover of their land and specially their town, where despite the circumstances learnt and knew the really part of the life.

Responsible, sensible, kind and a little outdated, Ronald has earned the respect, friendship and trust that everyone around his. Now is famous, but not for this is arrogant and proud of his fame, is a normal chef who try to work hard and better every day.
3.2.2.3. Relationships.

How I said before Ronald is the Bubys father, actually, their relationship is a little stressed and no the best possible between father and soon. The precision that has to support Ronald about the Bubby decision is tormenting him.

Another problem that concerned Ronald is the displeasure to Bubby to by chef, he do not like obligate anyone to do everything that he do not want, but in this case he have not election because is to old. In the other hand , his boy, a little playboy, need seating the head and start to do something in his life. Ronald think that this is the best way for him, Transfer his company.

Another important relationship is with Marcos, his TV producer and friend for more than twenty years, the relation is more than professional, they meet together in a conference twenty-five years ago, and since this day they work together.

3.2.2.4. Character design.

Son of a poverty couple, Ronald was born in Gritun, a small town in the North of France. Her mother showed and teach him during his youth all that she can: languages, maths, housekeeper tasks, etc. When he was twelve years old, started to work in the town restaurant with his uncle during ten years. Between this, he had been saving a lot of money to pay their studies. How he do not know anything else and he had been working in the kitchen for more than fifteen years, decide to start the graduate in this.

Earlier, he was the first in the class and everyone said he had a natural talent for cook. Had not yet finished the university, Ronald started to think in open their own business, a restaurant.

With his savings, their parents money and with the help of the major, Ronald open a little restaurant in their village.

Quickly the restaurant grow up week per week and in only one year he receive his first Michelin star. With this and his talent the restaurant grew up more an more since nowadays, One of the best restaurants in the world.

But Ronald never lose their origins, he know the poverty and the difficulty to go ahead, no looking behind, and with this reason, now is famous, but his head is in the land.
3.2.2.5 Character view.

Fig. 3.9 Ronald complete draw.
3.2.2.6. Character View.

Fig. 3.10 Ronald frond, back and profile.
3.2.2.7. Colors Sheet.

Fig. 3.11 Ronald color sheet.
3.2.2.8. All Views.

Fig. 3.12 Ronald all views.

3.2.2.9. Clarifications.

Ronald is very patriotic, he always look the France flag in their hat, in the other hand he like boots, because is a memory of their hard childhood, and finally, he always look the emblem accrediting that he is the best chef 2013.

Fig. 3.13 Ronald chef complements.
3.2.2.10. Character and expressions.

Fig. 3.14 Facial expressions.
3.2.3 Marco.

3.2.3.1. Description.

Marcos is a television producer with a lot of experience. He has been working in the television since he was eighteen years old, and now he has more than forty years experience.

He has a lot of awards for his work in the Cinema world, and especially in this last years, in the television. He has been working with Ronald Fironi for twenty years and now their program have one of the best share in the world.

Role: Secondary character

Age: 47

Gender: Male

Height: 1.72

Weight: 96

3.2.3.2. Personality.

Marcos is disciplinary, worker and concentrated, but at the same time is a little carefree and sometimes forget somethings like where are their headphones or the key to open the set.

With a lot experience in his back, Ronald is confident and direct in his job, does not mother the setbacks that always come, he always finish the program, and finish it perfect.

3.2.3.3. Relationships.

Marcos have a very good relation with Ronald, they have been working together for a long time and now are best friends. Ronald always accept the Marcos decisions because all that he says and think is always the best option to choose.

Ronald have an university worker call Vash doing his practices, he like a lot this boy and treats him as the son that he have never had.
3.2.3.4. Character design.

Ronald is a TV worker. He started in the Audiovisual world very young helping his father in a local television show. Faster he grow up as a illuminator, producer, camera and at finally director.

twenty years ago the BFTV give him the “Fironi show” project, and side by side, he grow up the program with Ronald until nowadays. He receive five award for the program and one recognition by the Ministry of Culture.

3.2.3.5. Character view.

Fig. 3.15 complete Marco draw.
3.2.3.6. Character View.

Fig. 3.16 Marco front and profile views.
3.3.3.7. Colors Sheet.

Fig. 3.17 marco color Sheet
3.2.3.8. Clarifications.

Marcos have always liked the freak t-shirts, different and colorful. He always arrive to the set with one of this. In the other hand the most important think in his life is the red cap, the cap that has followed him all these years.

Fig. 3.18 Marco special complements.

3.2.3.9. Character and expressions.

Fig. 3.19 Facial expressions.
3.2.4 Vash.

3.2.4.1. Description.

Vash is the typical University worker doing his obligatory practice in the television. He has been studding an audiovisual graduated for three years and now is in the final tram.

His function in the program is doing the bad job like bring coffee to Ronald or check de material.

Role: Secondary character

Age: 22

Gender: Male

Height: 1,75

Weight: 79

3.2.4.2. Personality.

Happy, always with a smile, worker and responsible for transmitting good vibes to all the team, he has never say no and try to do more os what they ask.

3.2.4.3. Relationships.

Vash has a good relation with Marcos, his master and professor in the Television. In the other hand he has a very good relation with Ronald, but only formal because in the important meetings he never assist and he has never had the possibility to know better him.

3.2.4.4. Character design.

Vash has been studding audiovisuals but he has not finished yet. When he had to choose the practice and he had the opportunity to work with Marcos, one of the best producers in the world, and his idol since he was young, he did not think it twice, he catch the practice and start working in “Fironi show”.
3.2.4.5. Character view.

Fig. 3.20 Vash complete draw.
3.2.4.6. Character View.

Fig. 3.21 Vash front and profile views.
3.2.4.7. Colors Sheet.

Fig. 3.22 Vash color sheet.
3.2.4.8. Clarifications.

Vash go everywhere with the cables in case that Ronald ask to him for one at any time. Another thing important are the socks, he like up this ones combining with short trousers.

![Fig. 3.23 Vash special complements.](image)

3.2.4.9. Character and expressions.

![Fig. 3.24 Facial expressions.](image)
3.2.5 Ruffy the Bee.

3.2.5.1. Description.

Ruffy is the minor character in my short, is a bee that for causality arrive in the Fironi show set. She is pretty and proud, for this, when Bubby attack him with a knife she answer fighting for his life and pride.

**Role:** Secondary character

**Age:** 5 months

**Gender:** Lady

**Height:** 3cm

**Weight:** 15g

3.2.5.2. Personality.

Proud, pretty and delicate, she has a strong character and she has never permit that someone play with her or treated as an object of negligible.

3.2.5.3. Character design.

Ruffy, is the princess in their colony, she has the respect, the privileges and liberty that she want. Ready to take the crone, Ruffy is trying to discover the villages around the colony to know how defend and protect it. In one of this flies, arrives in the Fironi show kitchen and takes out their pride and try to be enforce fighting versus Bubby, at final but, she will lose.
3.2.5.4. Character view.

Fig. 3.25 complete Ruffy draw.
3.2.5.5. Character View.

Fig. 3.26 Ruffy front, side and back views.
3.2.5.6. Colors Sheet.

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<th>Color sheet</th>
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Fig. 3.27 Ruffy color sheet
3.2.5.7. All views.

Fig. 3.28 Ruffy all views.

3.2.5.8. Character and expressions.

Fig. 3.29 Facial expressions.
3.2.6 About the characters.

I have to comment some interesting thinks about my characters before start with the plot. I have to know that my first intention was to create all of this five characters in 3D and give importance to everyone. But this world reserve my a lot of surprises, and at finally, the difficulties at the time to create the characters caused that I only use physically, my main character Bubby and Ruffy the bee. The other three characters appears on my short ubiquitously using the off voice. Their roll is the same that at the beginning, stay in the control room commenting the development about the program and checking the audiences, but, without appear, it not was difficult to do, but I did not have time to create them.

In this photo you can see all the characters that appear in my final short, in their own form or in off voice. Is a pity that I could not create all. I have always thought about it.

Fig. 3.30 all characters.

Another important decision during the creation about the final plot, was about reduce the Ruffy personality. At the beginning, Ruffy was more rational, she thing like a human, have mouth to speak and act like a main character, therefore, and again for the difficulty process, I decided to reduce the character to a normal bee, the animal.

Although all of this setbacks I have never changed my characters design, the personality is the same and their form of act as well. The final form that you will see in the short is almost identical to the initial one. I have never changed my characters.
3.3 Plot.

The plot is the text where I explain all my story. First, I have to look for an idea, the main part of my short, is very important think alone and calm to take the best idea an non rush, because if the idea is bad, all my story will be worst. In my short, the main theme, o the principal idea, is playing with the audiences. If Bubby (my main character) do thinks good, the audience up and everybody is happy and see the program, if Bubby fail, the audience down and anybody looks the television program.

Then, is time to develop the story around this idea and start to create secondary terms and points of interest. I need to keep on the audience, for this I use this interest points, growing up my short rhythm in interval times. I have three points of interest. The Ruffy the bee fight, the forget food time, and the Rube machine moment. With this three, I try to catch the viewer during all my short.

When you have all of this, is time to answer all the typical questions necessaries in a professional product. You have to think in your story and answer, What, When, Where, Which, How, Who and Why. Do it this, you can start to write seriously.

Another important part in the plot, is define your character, you need to know the emotional part and how they act and change during the short. For this I did a file from everyone that you could see in the previous chapter.

3.3.1. Story line.

We are situated in Griton, a little town in the North of France, The village where Ronald have lived all their life. In his childhood Ronald lived in the poverty, his father die when he had ten years old and his mother had to grow up alone the family working as a housekeeper in the major house. They had not money to pay Ronald studies, also, he had to work to help the family. So, Ronald started to work in his uncle restaurant. During their off days, his mother taught them all that she knows. In this manner, Ronald grow up and save money to pay their kitchen studies, his passion after working for more than seven years.

Four years later, with the Kitchen graduate, Ronald decide to open their own commerce in the same town, that despite everything, was his home.
Quickly, surprising everyone, the people start to like the restaurant quality, and the recognition came fast. After one year, Ronald receive their first Michelin start for the Fironi Restaurant. Until here the awards non stop and the restaurant was full every day. For the first time in his life, Ronald was rich.

With the wish to expand the company, Ronald decide to start a television cooking program where he show and explain how to make a lot of interesting French plates. The initiative is welcomed for BFTV and they decided to start with the project putting Marco, one of the best producers in the world, as a project director. Equal than the restaurant, the program have the best audiences in France and the Ronald repercussion grow up until his nomination to the best chef in the world 2013.

Thereby, the time pass until nowadays, Ronald is old and he has to leave the restaurant, their body is exhausted because their hard life and he has to decided what to do. Ronald have a boy, Bubby, who would like to be a mechanic but is very vaguely and clumsy without motivation to do anything, but he think that this is the perfect opportunity to shake and grow. For that reason, he decide to transfer the restaurant to his soon.

At the beginning Bubby do not like it, an refuse his offer, but at finally, after thinking a lot about all that their pope did for them, he accept to start this new adventure and follow with the family company.

Accept this responsibility implies appear in the Fironi television show making some plates. Is in these moment when my short start, in his first television Bubby show. He is nervous and has fear for if the program fail for his fault. The program start normally, but he do not know about the red light in the camera that show that is recording, and he has his finger in his nose while the program is on air. This is the worst start possible and the audience start to down.

Marco and Ronald are in the control room with Vash controlling all the cameras, audio, titles, etc. and commenting the Bubby errors. In this one, they decide to give him another opportunity because the nervous plays him a bad trick.

After this fatal initial program, Bubby present the plate and start to cook. All works normal until a bee appears in the set and start to disturb. This is my first point of interest. Bubby, that is very nervous, decide fight versus the bee in order to make out it and continue normally with the program. Ruffy, the bee, watching that Bubby goes straight to her, try to defend himself and start a brutal
fight that ends with her death and another audiences drop that will make thinking to Ronald in the program closure.

After this setback, Bubby continue with the plate, but, at the time to take the food from the fridge, this one is empty because he forget to buy the ingredients. In consequence, Bubby call to the supply store to order some food. At this moment the audience is in the minimum and Marco and Ronald have not any idea what to do. This is my second point of interest in my story.

Therefore, until this moment all will change. The delivery arrived with the food and Bubby start to explain to the audiences that he is not a good chef, that he would like to be a mechanic and work in a workshop, but, he do not have election, he has to continue with the program, although, now-one says that he can not changed the style. Is time to make a revolution in the cooking world combining mechanical and cooking skills, is time to renew the program.

Bubby decide to combine his abilities in order to create an amazing Rube Machine (next chapter). With this new revolutionary machine, the hospitality world will change for ever. All the people like it and the audience start to grow up. Quickly he brake the share and all the world know that the restaurant and the future company is in the good hands.

Ronald and Marco are proud and happy because Bubby do it, he pass the challenger.

3.3.2. Final.

I am a passionate with the happy ends. I have always liked them and for this I decide to do the same in my short, where in the end, everybody have the best final possible.

Bubby is happy because now, in his style, he likes to be a chef and continue with the family company. Ronald is proud because his daughter triumph and the restaurant is in the good hands, he can rest in peace. Marco is happy because the program succeed and they have the best share ever. And finally, the audience and all the world like Bubby now, he have done a revolution, all the people like this Bubby show.
3.4 Rube Machine.

The Rube Goldberg machine is a sophisticated device that realize a simple task in a very indirect and elaborate form. In the other way, doing something, in a redundant manner extremely complex that actually or apparently could be done more simple.

Since I was young I have always liked this machines. A lot of times I meet my friends and we did someone in a basic level, we are not engineers and create a big Rube Machine is difficult and expensive.

You can see a lot of examples in YouTube. One of the best in the world is the Red Bull machine make it this year, or the Guinness World record Rube Machine. You can find Rube Machines as well in a table games like “Rats traps”, computer games, consoles, etc.

Cause my interest for this, I decide to create a Rube machine in my short. I do not need money because is not real, is a 3D animation, and this, is an advantage, because I can do all that I want without spent an euro. I decide to create a kitchen machine who cooks all the plate during the Rube process. It will be my best point of interest in Mechanical Chef, creating this revolutionary new way of cook. This is why Bubby triumphs, so, I have to do the best machine possible.

Is very difficult thing in the machine, I am creative, but I am really collapsed in this point, at finally, I use a lot of references and I get it. In this first pictures you can see the initial draft.

Fig. 3.31 first Rube Machine draft.
I will explain you all the Rube machine using the final draw that I did before clarify my ideas.

Fig. 3.32 final Rube Machine draft.

The Rube machine start always with a human action, in my case, Bubby push the button in order that the pea (1) start to go down by the rail activating the first block (2). The whole potatoes down to the machine chips (3) and begin to do it. On the other way, the pea follow the rail until active the fire (4) for the cheese sauce and continue until touch the button to open the iron machine (5). In that moment, we have the cheese hot and cull, the meat becoming in the iron, the potatoes frying (6), and the pea following his way.

When the pea arrive to the rubber (7) that hold the spoon with the second pea (8), the rubber fly and activate the spoon pulling the second pea to the cheese site (9). At the same moment, the first pea put in bran the vegetables machine (10). The tomatoes start moving and be cut by the blades (13).

We arrive now to the final part, the first peas activate the last block (11) and the meat go down to the plate (15). At the same time the chips ready to eat arrive to the plate, the vegetables reach the plate by the conveyor (12), and the hot cheese falls into (14). So, we have our perfect meat with chips and vegetables ready to eat (15).

In the annexes you can find another Rube machine thought by official script which was eventually discarded.
3.5 Dialogue.

Step to step, we arrive to this point. Finish the plot, is time to start the Storyboard and the dialogue. I have always done this part simultaneously because is very important know how many time your character lasted speaking about every plane. You need to know it in order to adjust perfect the timeline and make a estimate final time for your project. In this manner, I realize my final Storyboard.

Normally, I use to create an initial dialogue to reference and I do the Storyboard. Later, with the Storyboard complete, I review the initial dialogue and I adjust it to the final one.

You can find the initial dialogue to the annexes, later I change it for the definitive one theat you can fin here:

**OFF voice Bubby:**

Hey! What up, anyone there? Well I have to think that you do not know me, I am Bubby, and I am a bit famous these days, my father is one of the best Chef in the world, but he is old and decide transfer to me the restaurant. You can imagine the repercussions? You can imagine this? The news are talking about me day and night, the clumsy and vague Fironi son on top in the best restaurant in France. It is not the best idea, I would like to be a mechanic, my passion and love, I will not like to do this, but I do not have election, I need to follow with the family company.

So, after working for one year with my father, today is an special day, he decide that is time to appear in his TV show “Cooking with Fironi”, this will be my first time that I will appear on the TV, and really, I am a little nervous because I can’t fail and all the world is focus on my.

My father it is not sure about it, but Marco, my father show producer and one of the best in the world decide that I have to do it to dissuade the criticism and show to the world my skills and prove that I’m capable to continue the program and the restaurant.

Pff… a lot of pressure no? ohhh! the producer it’s calling me, it is time, give my look, see you on the set!
OFF voice:

Fironis restaurant presents. And amazing show, cooking with Bubby!

BUBBY:

Purupuru!

RONALD:

Eh! Marco, what the hell is happening here? Tell him that is in!

MARCO:

Calm down Ronald, He is nervous, wait…

BUBBY:

Ups!, stop, wait wait. OK! Welcome to the Fironi show! Today it’s my first day and I will try to do it in the best way possible.

I show you how to make an incredible Salmon with vegetables. Let’s go to put some water to boil the vegetables.

Now, while we wait for the water take one lettuce and start to clean it, it’s very important take out the bad leaves in order to have the best plate...

Ehhh!

We have and stranger guest, team alfa, team alfa, ready for the operations.

Common little be, come with dad.

Die!

Is stronger that we thinking my colonel, we need permission for face two.

Affirmative!

Ah ah ah!
RONALD:

Marco we have to stop this program, this is an authentic disaster

MARCO:

Give him the last opportunity!

BUBBY:

Buff! After this set back, let’s go with the main part of the plate.

The fresh fish is very important in our day diet; I will take some for the fridge.

Hmmm, I forget to buy the food, How I explain this…

Think Bubby think in something, I’ve a solution!

Grypt food, I’m me Bubby, I need a favour, I need to do an express order for the Fironis show, can I have some Salmon, potatoes, lettuce, tomatoes, and some cheese as well, thank you.

Normally we wait for the oven, today, we need to wait for the food, see you later.

PRODUCER:

The delivery us here!

BUBBY:

Sincerely, I would like to be a mechanic; you saw that I am not a good chef, I do not like the traditional food and I am a little careless. Is time do a new style off food combining my mechanical and cooking skills. Is time to create a cooking revolution; is time to do what I want. Are you ready?

People, I suppose that you ask what I am doing. And, these is my answer, are you ready to see a revolution in the hospitality world. A new kind of plate that will change your mind about the traditional food, this is not a joke, this is the result to combine mechanical and cooking skills to create a new incredible machine that will do all for you, this is the future!

Are you ready, let’s goo!
MARCO:

I told you, our future and the restaurant is save with your soon, look the audience Fironi

RONALD:

Yess! This is my son!

BUBBY:

At finally and before a lot of setbacks we pass a good time no. I am very very happy and I hope to see you the next week here, in the Fironi shooow!!!
3.6 Storyboard.

Storyboard are graphic organizers in the form of illustrations or images displayed in sequence for the purpose of pre-visualizing a motion picture, animation, motion graphic or interactive media sequence. Is the form to pre-visualizing your final result. In the Storyboard you can find the final timeline, dialogue, facial expressions, behaviors, actions, extra information, notes, camera position, etc. In brief, all the thing that you need until start the production.

Is very important dedicate a lot of hours to create the best Storyboard possible, for example, in my case, I did three different Storyboard until find the perfect one.

When I had the initial plot in Wales I decided to do one Storyboard, at this moment, I was thinking that was my definitive one, but I was wrong. Now I see it and I am thinking that is a really bad work. In this first Story, I told a long story without thinking in the timeline or the dialogue, making bad draws, without color, etc. and when I was ready to start the production two months later I saw that I could not do anything with it, because I did it, but I did not understand it. You can find this initial Storyboard in the annexes.

For this, I decided to do another, more better and work. I spent three weeks doing this new one, I bought a Bamboo tablet to work with Photoshoop and I started to draw. I did every image full of color and accurate in my best way possible since I am not an illustrator. Also, you can find this one on the annexes.

But the problem of the first storyboard haunts me. How I did it without thing in the timeline, now, the new Story lasted ten minutes, too long to do it in 3D. I sent and e-mail to Glyndwr University to speak my problem and I spook with my tutor in Mataró David in order to search a solutions. At finally and before thinking in a lot of possibilities like do a trailer, I preferred to reduce my short to five minutes, because I preferred have a final product that a trailer. With this, how I explain before, my initial plot had to change a little, but I maintain all the interesting points.

At this point, I only had to take the scissors and cut. It was very difficult reduce all this ten minutes without taking sense to my short, but at finally I did it and I had my final Storyboard ready to start to work with the production. You can see the final result in the annexes.
3.7 Audio

The audio is the 50% in an audiovisual product. Is really than one image is more important than thousand works, but, a video without sounds, voice and music leaves much to be desired. You only need to see for example me short with, an without music, The difference is brutal.

I am not a passionate musician, on the contrary hand, I hate the audio part in the audiovisual product, I remember that in the university work I had always done the visual part and left the music to my colleagues. I know that this was so bad for my, but I did it.

Now, with the Mechanical Chef production, all of this change, I was alone in this project and I had to do my own music without help. I had to put my batteries to recover the lost time. Fortunately, I discovered in Glindwr University one amazing program who helps my a lot, Logic Pro. This is an apple product for the professional sound easy and fast to use.

With this program and some free sounds web pages, I did my sound track. On the other hand the Bubby voice is recorded in the Glindwr university professional sound study with myself.

Is very important select the perfect music in this part in order to do the animatic very realistic and equal than the final product. You need to know the music to realize the short rhythm, Combine the interesting moments, calm moments, the racy, etc.

My short have a main theme all the time, a typical cooking music that sounds low in the background. Then, above this music I put all the other sound, music and voices. Normally the routine is the same, Bubby is doing something normally with the main theme ringing, and then, something happens and the rhythm up. This happens in the bee for example, I need to increase the interest and show a change in this moments, for this I use another music more intensive and shocking. Another theme very important in my short is the music program, thanks to her, you can remember all the time that you are in a television program. The music is repeated four times throughout the short: in the intro, the breaks and the ending program. An finally, the Rube Machine, my best point. I have to put the music to know that. The music in the final part of the short, during the machine process is completely opposite to all the others, This is for break the rhythm and give to the spectators and amazing different ending that surely did not expect.
3.7 Animatic

dthis is the final part in an animation preproduction process. The animatic is use to give a better idea of how the scene will look and feel with motion and timing. At its simplest, an animatic is a series of still images edited together and displayed in sequence with a rough dialogue and with the sound track added to the sequence of still images (usually taken from a storyboard) to test whether the sound and images are working effectively together. In brief, is your final project do it in 2D with basic movements and animations.

To have the best animatic possible you need to work hard in the previous chapters, is very important have a perfect Storyboard, soundtrack and dialogue in order to put it all together in the animatic. I do not leaves any point because without animatic the production will be more difficult.

During the Mechanical Chef project I realize three different animatics, one for each Storyboard. The story is the same that I explain before in the Storyboard chapter, just add that do an animatic is not simple and easy, you have to work a lot of hours because you are working like doing a final project result. And for example in the second one, that is ten minutes long I spent one week for nothing because I had to changed it for their lasted extended. Imagine that I start to work in 3D an then I have to change all. I will be frustrated, the animatic saves you to pass this bad time.

Did it, the animatic is the best help that I can have in the production process. Every time that I need to remember something about the plot, the times, the characters interactions, etc. I have always gone to my video animatic and review it. You save a lot of time and work more efficiently.

You can find all my animatics in YouTube. In my channel capicirc:

Initial Animatic: http://www.youtube.com/watch?v=Sj9FrpGEN9s

Final Animatic: http://www.youtube.com/watch?v=uagihMVpOdM

Definitive Animatic reduced: http://www.youtube.com/watch?v=wgm80OAmSoUo
3.8 Credits.

The recognition about a big work is not only for the director or the creator, for this, is very important do the credits in order to assess every person who participates in your project. I think personally that the credit goes to the entire team because without team, you can not do anything.

I would like to give them a different shape, I do not like the typical white letter on black background. Therefore, I decided to do a short story explaining what happens before the Bubby success. The idea was putting some static images showing the restaurant progress, the Bubby evolution, and the global repercussion about his new revolutionary way of cooking. Mixed with this images, I had to put the letters. But at finally, I did not have time for this ambitious final and I change it for another one a little bit easy.

I thought in what happens next the final story, and I arrived to the conclusion that Bubby will be famous, in consequence, he will win a lot of awards. For this, I decide to do my credits in the Bubbys room, there, he has all the awards that he win during the years following its debut.

You can see in the next photo the final composition where I will put my credits. The awards are: Best chef EU 2014, 1st technological innovation award, 1st restaurant in the world, Red pan ward 2014, World best Chef.

Fig. 3.33 final credits composition.
4. Production.

Where the amazing thinks happens. This is my definition about the production. Is time to catch all your preproduction and start to give shape to your project. At this moment you are ready to open the Maya software and create all that you need.

I divide my production work in a different phases from my Maya knowledge, I prefer to do first all the thinks that I know who to do it and then start to work in the new areas like particle system or character rigging. So I am focus first in the sets, then the characters, the animation, and finally, the render.

4.1 Sets.

The sets are the place where my story happens. In my short I develop three: The restaurant, the kitchen and the control room.

I started with this part because is the easy one, I know how to modulate, texturize and lighting static objects because I did it before in the university works.

4.1.1 Kitchen.

I would like to do a realistic short and for this I need a realistic kitchen. To do this I look for a lot of references on internet like Arguiñano show or La cuina de l'Isma, in order to know the kitchen composition, take the object references, and the interior light in a cooking TV show.

4.1.1.1 Modulate.

The kitchen is the main set in my short and for this I dedicate a lot of time doing it. To do every object that you can see I search references and try to copy all the details possible.

The modulate is easy, It is done using polygons modified using extrudes, blend shapes and deformations that can help you a lot effectively and easily. It need only take your time and be patient.
I started to do the general furniture; the worktop, the fridge, the shelves and the sink. When I had all of this, I opened a new project and started to model the complements separate; the pan, paper, knives, flowers, etc. And at finally I composed all using references in a new one. Use references is very practical because if you do not like for example the pan shape or color, you can go to the original file, change it, and then update the reference. I will see that the pan take the original file information and renew your final project pan file. Another way of work is importing files, but in this manner, I do not have original file and is more difficult to fix something wrong.

Who I can see in this image, to modulate my kitchen plants I use the Maya paint effects, and easy way to create complicated thinks like trees, plants, water, fire, etc. I only have to make paintable the floor, take the plant brush and paint. The plant born alone and you only have to make some adjustments colors and transform it to polygons in order to render with mental ray.

I told before about the modulated. I can see hear an example, this is drawer that appears in my short. You can see the simple mesh. Is only a cube without one face put inside another cub more bigger. Then to do the handle, I only did one cube, elongated it and add smooth. Easy, you only need to waste your time and put a lot of imagination.
This is the final kitchen modulate. To finish the explanation I would like to add that I use the nCloth to do the tablecloths close to the knives. I only have to create a plane with a lot of divisions. Then make the worktop passive collider and click play. The Maya software calculate the plane form and when I like it, push stop, and clean the history to fix the position.

4.1.1.2 Texture.

Texture en lightings is always complementary, without light, you do not have color. For this you can not do the definitive texture initially because it will change later with the light.
I use a lot of materials in my kitchen modulated. The first one is the lambert, a spot color without any special characteristic used in the wall or the wood. Another interesting material that I use to give a modern touch to my kitchen is the phones and e-phones, a reflectance material who copy the plastic and give a very good final to your set. And finally, I use the blind material, to give good texture to the iron parts like the sink.

Reference to the color, I like a lot the combination white and green, on the other hand the green is my favorite color, and how it is my short and my kitchen I give them this look.

Another interesting think is the opacity property that all the materials have, you can see it in the clock, the oven door, or the glass. Thanks to this you can see behind this materials doing these objects more realistics.

To finish I would like to speak about the plates photos who appears in the background. This is my own production and I have not permission to put copyright photos. Therefore, I decided to take personally the plates photos and put it under my copyright.

4.1.1.3 Lighting.

The kitchen lighting was one of the best challengers in my production process. I would like to give it perfect but I do not know who do it. For this reason I last a lot of time, but at finally the result is very good.

Fig. 4.5 Final lighting.
You can see in this photos all the lights that I use to illuminate the Kitchen, every red point is a light. In totally, 44 ready to give the best quality product. 43 spot light and one point light.

The point light is on the top to ambient all the kitchen and give the color correction to a warm light, own in a television set.

The other 43 have one objective, there is not a light placed for nothing. We have 20 lights doing the function as a real light placed in the illuminations, and then, we have the other 20 as a fictitious light placed around the set to cover all the spaces in order to give a realistic illumination. Finally we have a 3 spot light covering the entire set responsible to do the shadows. This 3 lights are frontals and with a lot of rank.
4.1.2 Restaurant.

Opposite to the kitchen I did not think a lot about the restaurant shape. I did not search references because I would like to do something different, that no exist. For this I did not want foreign internet influence. I created all from zero, only using my imagination.

4.1.2.1 Modulate.

Following my style, I would like that the restaurant looks modern, for this I use a lot of spheres to do it. The round for me is synonymous to modern. Another important think that actually is relationally with modern is the glass, put a big windows or make all the building with glass is the last fashion in the construction. Therefore, I use the both thinks, rounds shapes and a lot of glass to do a large dome on the restaurant top.

![Fig. 4.8 restaurant domes.](image)

Across the rotational dome, the customers have good views 360° around all the restaurant grounds while enjoying a delicious meal. In this photo you can see the dome mesh, again, is only a sphere halved resting in a cylinder, anything complicated. To do the grid I use a lot of cylinder duplicates in a plane and them I combining it as and object. When I has the object, a plane grid, I use a deformer to give them the same shape that the sphere.

Talking about the ground, the restaurant have a lot of hectares ready to walk between the nature before eating to open the hunger or before eating to wash the food down.
Finally, on the restaurant limits we can find a fence delimiting the restaurant propriety. All the fence is doing by my using deformers and spheres. Another think that you can see in the fence is the restaurant name, this is a simple text with relieve hooked in a plane.

4.1.2.2 Texture.

I explain before the material functions, so now I only comment to you what material I use in this case. You can see that all my restaurant, the fence and the floor is a lambert material without any reflections. The floor is a grass images duplicated since get along. the glass is a phone material with opacity to give the better effect. And finally you can see that I use again paint effects to makes the trees an the plants on the edge. This was the initial idea, but I did not like the final result and I decided to work hard to improve it.
This is the final restaurant. How I do not like the first one I decided to change some thinks. I can see the grass, at the beginning it was only a simple image put it as a ground floor, now, I use the Maya system to create this more realistic grass. The time to render is more large, but the final result is amazing. On the other hand I take out the bump mapping in the restaurant, I prefer a simple yellow lambert more clean. Finally, and the most important change, is the paint effect. The trees using this technical was so bad in this case, so, I decided to change it for real trees modulate one by one. I think that the final result is too much better. I always can improve something, nothing is perfect.

4.1.2.3 Lighting.

In this case the lighting was so easy, the restaurant is on the outside and for them I only need sun light. For this, Maya software have a plugin call, physical Sun and Sky who generates automatically the sun lights and their shadows, you only have to change the intensity and decide witch time of the day is.
4.1.3 Control Room.

The control room is the site where Ronald and Marco control all the program. This is the most secondary set that I use in my short. It only appear three times and no more than ten seconds. At the beginning it will be more important, but the file who contents the control room information scratch in Glindwr University and I could not open it. For that reason, I have to delete some scenes and adapt the short to the consequences.

To do the control room I took again references because I have never worked in the television and I did not know exactly what their use. I take references fro the computer, the televisions and the most important think, the mis table with the telephone.

4.1.3.1 Modulate.

It was the easy one to do, the reason maybe is because I left it for the final and I was on fire working with Maya software. But I did it only in two days. The modulate is again simple and only using spheres, cubes and the extrude tool, one of the best tool that all 3D program have to do.

Fig. 4.12 Control Room modulate.

To do the control room I optimize my time a lot using duplicates. I can see that the chair is the same one duplicated three times or that the television panels are the same television duplicated. The computers are duplicated three times as well and the off/on light is the same. The only think that I hd to work hard was the round table and the mis site.
This is the program control, it was very difficult to do for my because I was fighting one hour to do the platform to put the controller. At finally I did a plane and I create a lot of cubes, then I deformer the cubes and make a Boolean to take out the cubes and leave the space to put the controllers. All the controllers are the same duplicated. Another think that I reuse was the telephone, I did it for the kitchen but I reuse it here. At finally I modulate two levers and the table was ready to run.

4.1.3.1 Texture.

Looking for some reference I see that the control room is always on the darkness in order to see better the televisions and create a concentration ambient. For this I give this same look to my room.

I give them a dark lambert colors like black and gray to create this control room atmosphere, Then I use some e-phong for the televisions to represent the screen and finally, I give some retro luminance red and green to the control lights.
4.1.3.2 Lighting.

How I said before, the control room is a dark place, for this I only need to use six lights. One point light and five spot lights. The light are the red points.

The point lights have the function like an ambient light, to fill the set and give theme the color correction.

The other five spot light, combining each other, create the perfect darkness illumination that you can see in the final result.
4.2 Characters.

4.2.1 Bubby.

I have never created a character in 3D before. I knew how modulate inorganic objects but it was my first time trying to do a human body with skeleton, rig and real cloth. For this reason I had to look for a lot of references and tutorials. I spent one months and a week to complete it and have the final Bubby ready to use.

4.2.1.1. Modulate.

I have to start this chapter with this image, this is my first try when I decided to start to modulate my main character Bubby. I did not know anything about how do it but I decided to investigate for myself, and this is the result, so bad.

In this point I remember that I stopped my project during one week, the frustrating and desperation end with my, I was collapsed. I did not know absolutely nothing. I was very arrogant to think that I could do it alone.

Pass the bad week, I started to look for internet tutorials and I found an amazing YouTube channel who show my how to make a character since 0 to 100, including the skeleton and character rig. So, I decided to follow it until the end, and really is the best thing that I could do, because thanks to this now I have a perfect character, and the most important part, I know how do it.

With the Youtube channel ready it was time to start. To modulate a character I need first the perfect front and profile draw face to put it as a plane in the Maya software and take it as a reference. I decided to start with the face only because the tutorial that I was following start in this part.
All the human face born as a simple plane with fourth sides. Then using this face, is time to extrude following the frontal reference images. When you have all the face as a plane, is the moment to take the profile view and start to give some volume to your character moving the points (the pink points on the image). Extrude and move, this is the brief to crate a human face.

Is very important for the animation that I work all the time with squares, if I have triangles in our human face, it will be bad later and could cause unexpected setbacks mesh deformations.

Ready with the face mesh, is time to create the extra parts like eyes, mouth and the gear ear.
Mechanical Chef - Memory

The eyes creation was really complicated. I spent two days doing it. I would like to do a realistic eyes with good aspects and movements.

I use one sphere for the iris and one for the eye, I take a green image for the internet to create the green iris, and for the white, I use only a simple e-phone material. The complicated part was the rig and create the eye lids. At finally, with the two controllers (two yellow bars that you can see on the image) you can move all the iris opening and the flickers. In the image, I can see two more yellow cross controllers, this ones are use to give realistic eyes movements to the right, left, up and down.

Another important think for my character is the ear gear, to create it I used a sphere with a few faces and I extrude alternatively this ones creating the gear effect. I duplicated it and I combine the two object in order to have my final earring.

With all the face completely, the normal way is continue with the body, but in my tutorial focus to rookies, taught us to do the hand and then compose all together.
The hand progress is very similar to the face, you start with a single plane and extruding it. I get the final result. The different think is that doing the hand you use a lot the tool to add edges in order to work more quiet until the end, when I add some edges to create the finger joints or the wrist. Is very important add the final smooth to have the realistic result.

Fig. 4.22 Bubby final hand.

Created the hand and the faces I only need to compose it together with a body and start with the rigging part. I did not create legs because my character is all the time behind the kitchen desk, so, the legs never appear. For this, I save a lot of time in this part.

4.2.1.2. Rig.

I have never worked before on rig and I was very excited, give movements to my character is a think that I would like to do all this years since I like a lot the 3D animation.

To create a perfect face rig the people use joints and a lot of controllers, but how I am not a professional I decide to use the easy way, using blend shapes. No for this is a bad way, a lot of big companies use this technique in their films. It is about creating one face for everyone facial reaction like happy, sad, angry, etc. and one face to represent some vocals and consonants. When you have all this faces, in my case I have nine, I have to compose it using blend shapes and creating controllers for everyone, then hide all the faces and leave only the final one that has all the movements to do. In this manner, your character is ready to speak and start to act.
Create the body rig is the most complicated part for me in a 3D short, without joking, I can say you that I repeat more than ten times all the process. I remember that at finally I did it without looking the tutorial. At least, repeat ten times the process served from something.

The creation start from the bones, blue part in the image, I have to create the bones thinking in a real human body and creating as equal as possible the same ones that you have. This is the easy part.

When I have all your bones is time to give them controllers and priority chain in order that when I move for example the shoulder, all the arm continue this movement. The controllers are all the yellow parts in the images. A control for himself is only a line or circle, they do not have power on the skeleton, I have to give them orders.

The process is always the same, I take a controller and select the joint that I need and constrain both. For example I take the shoulder controller and the shoulder joint, with this both selected I am going to parent constrain and select the axes where I would like to do this, in this case X and Y axe because you can move your shoulder up, down, back and forward. I click to accept the process and now I have the controller parent to my joint, so, when I move the controller the skeleton follow the movement.

When I do it with all my skeleton parts, the harmony is perfect and I can move my character like a real human body. Remember that is very important control the Hypergraph Hierarchy to maintain the priority order.
Fig. 4.24 Bubby fingers rig.

For the fingers the rig is a little bit different because if I do it as a traditional form I will have to move every time every finger and it will be insupportable. For this is better create a controller that will give all the order to the fingers. To this controller we create one modifier to every finger and give them properties 0 to 10, where 0 is the hand completely open and 10 in the hand closed. Do it this I have to select the fourth joint that compose every finger and give them the properties discussed above with a Maya option call relationship editor.

Did all of this is time to combine the skeleton with the mesh (skin), the process is easy, you have to go to the skin properties, bind skin and smooth bind, with this, when you move now your controllers the skeletons is moving the skin (mesh). But this union is not perfect because Maya by default decide which part of the skin affect to every joint. Always I have to changed it in order to not have deformation or bad movements. To do this I have to edit the smooth skin with the paint skin weight tool and painting like a Photoshoop the parts that I would like to use for every joint. Did it, my character is in the final way of the process.

4.2.1.3. Clothes.

At the beginning I would like to do real clothes using the nCloth and passive collider, but it was really complicatedly because it was a slow process, the computer have to calculate every frame from the cloth position and it is a lot of time waste in the render phase that I do not have. For this I decided to do the clothes as a mesh, it do not have realistic movement but using a cloth material the final result is pretty good.
Fig. 4.25 Bubby final kitchen clothes.

To do the cloth as a mesh I take the Bubby initial mesh and I duplicated it. Then I did it more bigger and cut the hands and the face. With it I had tight clothing for my character. I add some details like buttons or the pocket and change the colors to white and res. Then I modulate the toque and it was ready to appear on the television.

On the other hand I has a secondary mechanical clothes, the creation progress is the same, the different think and where I spent more time is doing the details like the closing parts, the pockets or the cup.

Fig. 4.26 Bubby final mechanic clothes.
4.2.1 Ruffy the Bee.

Equal that Bubby was my first character do it with 3D Maya software, Ruffy was my first realistic animal. I have never worked on this way before and I was very exited. The process to create it was very different than Bubby, this is because I spent one month and a week to do my main character and I learned a lot about Maya bones, rig and facial animations tools. For this reason, to do my Bee I had not need any tutorial, I had only used all my knowledge acquired previously. Thanks to this I had my Bee ready for the animation only in three days work.

4.2.1.1. Modulate.

To do the bee, I needed internet images references to know the shape and the basic form. Once with this, I have started to modulate. To create the body I used three spheres joined together, everyone with their own deformation. Then, for the eyes I did the same process as Bubby but changing the color green to purple, I ad some details using triangles like the tail, the antennas or the mouth, and at finally, using a normal plane without volume I did the wings.

The texture is very simple, I use a two normal lambert for the body, one yellow and another black, and one e-phong blue with 50% of opacity for the wings. Then I add some fur in the antennas, the mouth and paws and I had the final result. I have to say that at finally and for render problems I did my Bee without fur because the time that I have to waste for this was so large, the render is one of the best problems that I had during all my short creation. You need an extraordinary computer to work fluid and without problems.
4.2.1.1. Rig.

Fig. 4.28 Luffy final rig I.

To start the Bee rig I did the skeleton using bones, it was very easy because I only need to do a straight line. Did it, was the time to create the controllers, in this case I use one controller for the head rotation, one for the second part of the body, another to move the tail, and finally, a general controller to move all the bee.

With all of this controllers constrains with the bones I had my skeleton ready to work. The final process to mix the skeleton with my skin was the same that I use to create my main character Bubby, you have to go to the bin skin, smooth bin and adjust the final mesh with the paint skin weight tool. Did it, you can do bee realistic moments like this image:

Fig. 4.29 Luffy final rig II.  Fig. 4.30 Luffy final rig III.

Finally I had to give the complementary movement for the antennas, eyes, mouth and wings. I use a basic controllers using the editor position. I create fourth controllers that go 0 to 10, where ten for example is the mouth completely open and zero the mouth completely closed or where 0 is the wings up and 10 the wings down.
4.3. Rube machine.

Fig. 4.31 Rube machine modulate.

I left the Rube machine creation for the end because is a easy think to do. After working for one month and a half with my characters, create again and static object without rig was an step back in my learning progress. On the other hand this meant that my level of knowledge about Maya software had risen sharply.

I did it in one afternoon. How you remember, in the Rube machine preproduction I worked hard in order to know all their functions and their motion sequence. Therefore, was very easy to create. I had not to create and develop anything, only take the preproduction draw and start to pass the 2D to 3D.

All the materials use for the Rube are lambert, e-phong and blind. I use the lambert to represent the wood and the rail way. Then I use a lot the e-phong to give realism to all my machines that forms the Rube machine like the griddle or the cutter. Finally I put a grey blind to all my iron parts: the tubes, the supports and the buttons.

Fig. 4.32 Final Rube machine modulate and texture.
4.4. Animation.

Animation is the rapid display of a sequence of static images and objects to create an illusion of movement. The most common method of presenting animation is as a motion picture or video program, although, there are other methods. Animation can be made with either hand rendered art, computer generated imagery, etc. The position of each object in any particular image relates to the position of that object in the previous and following images. The viewing device displays these images in rapid succession, usually 24, 25, or 30 frames per second.

The animation process was the most complicated part during all this project. I created a 3D animation generating images with my computer using a render software. Before start to create my movements, I had to decide the frames sequence. In the animation world the rules are the same that at the cinema, the minimum to have a fluid image sequence is 24 per second, but, if you want to give more quality to your short using some fast or slow camera moves is better use more frames per second like 30 or 60. For me, I would like to work with 60 to obtain the best result possible, but, thinking in the render time, I wipe out this decision, render in this way implies 36 frames more for every second than if you work in 24, and in the animation world, 36 frames more for second is a lot of hours and days waste waiting for you final images. On the other hand, my computer capacity have a limit, and after rendering two day on road the system fails.

Chosen this, I have not started with the animation yet, the main reason was because I have never done this before and I needed to practice, therefore, I decided to do a lot of animation tutorials using simple objects or internet characters to improve my skills and abilities. I was working in this way during ten days, making animation movements, facial expressions and practicing with the particle system to create the water, smoke and the fire. Finally this fast animation curse I started seriously with my short.

This is one of the happiest moment of the creation progress, you start to see something that three months ago was just an idea drawn on paper coming to life, see your character move, speak and interacting with your set is an amazing feeling.
This is an animation sequence about my short, to explain more better the animation process I will focus all my attention in the animation bar.

Did the rig, the skeleton and the controllers, the animation process is only a long work playing with its in order to do the best realistic movement.

The animation is based on the keyframes. The keyframes are the solid positions that you make in some frames. For example, I have the hand open in the frame 0, I mark a keyframe here using the letter S. Then I go to the frame 24 and I close the hand using my controller, I press S to mark another keyframe. Now, we have two keyframes, the first one is the hand open in the frame 0, and the second is the hand close in the frame 24. Using this two frames. Maya software calculate all the movement between each others, in this manner we save a lot of time against the animation frame to frame. All we have to do is retouch or add more keyframe if we want a more realistic animation.

The hand example is only a easy way to understand the process. In the image 4.31 you can see a truly animation bar with all the keyframes in red that you need to make a fourth second sequence. Sometimes I lost myself in all this disorder.
To animate in a realistic way, I only need to have clear the human body and the physics laws. I need to know that my elbow can not rotate to back, that wrist can not rotate 360º or that I can make walk my characters without moving the foods. Knowing a lot of this simple details, I can do a better job and realistic animation.

Another important part is the movement continuity, using keyframes sometimes the continuity is very bad and your characters seems more like a robot than a human, to arrange this, sometimes I had to start the sequence again or put a lot off keyframes to solve the problem. I remember two scenes like the bee fight, where the animation is made almost frame to frame to finish with the continuity problem. Therefore, the result is better and I try to did it in all the scenes that I could for my time.

This is the animation process, very repetitive and a little bored in my opinion, doing the same for every scene, I finished exhausted with it.

The water is created based on Maya particle system, I spent one day only to do a three seconds water. At the begging I would like to do the fire and the smoke as well in particle system, but it was really complicated and I decide to use After Effects in the postproduction part to fix this. The water was a personal challenger and I decided to do it in this manner, I followed a very complicated tutorial to get it but at final the result is so realistic. The process is next, you need to create an emitter and give them a particle number like 10000, then you need to work with the particles properties, size, viscosity, color, etc. and give gravity to all the particles. Now you only need to push play and have a good computer. The water runs alone.
4.5. Render.

Rendering is the name given to the image processing for audiovisual products. In my case is the 3D image creation. There are a lot of renders type, you have a lot of options and plugins to take the best result. In my case, and after search for a lot of references and information I decided to do three different renders. The color, the shadows and the occlusion.

The render is the less work that you have to do during the production, but on the other hand, is the longest part because render a frame take plus or minus 2-3 minutes, so, for example, one second, 24 frames, take one hour render. But how I tall you before I did three different renders for every frame, therefore, the final time wasted for one second was 2-3 hours. In order to finish it I work simultaneously the animation creation with render, I did the animation during the day, and I rendered during the night, I was doing it during two months and a half.

The render sequence start with the color, I have all the textures and lights to my set and characters. Then, I disable the shadow options in all the lights and I take a plane images only with color. This is the final result.

![Fig. 4.36 plane color render.](image)
After this, I duplicate my Maya file to have a security copy and I start to change all my textures for one white lambert, in this manner, I have all my objects in the white color. Then, I select the lights that have to give shadows to my scene and I activate it. The result is a white images with shadows.

With this two render, you have a good final result, but how I would like to do something more realistic I decided to use the Maya plugin occlusion. This plugin calculate the object distances and create a realistic shadow. This render is the longest part in all the process because the computer have to do a lot of calculations.
Done all the renders, I need to compose it, for these, I went to the After effects and I put the three sequences in the same composition, then, I chose the layer option multiply to eliminates the white parts and played with the opacities. This is the final result.

Fig. 4.39 Final render.
5. Postproduction.

Is the process occurring after the end of shooting, recording, render, etc. Is the final part in an audiovisual product. Is time to assemble all you work, give the final adjustments and export the final result.

I did my postproduction part in Glindwr University during this July, this was my last months to finish it because I had to deliver the project on 26, at final and before a lot of setbacks I could do it and arrive on time for the delivery date.

The postproduction is in my opinion one of the best part, I enjoy a lot composing all my separately material, like sound, music, images, voice, etc. in one product, I love a lot see my project taking the final form. Is in this time when you look back and see all the way until here.

5.1 Compose.

I would like to compose all my short in Final cut X but in Glindwr university, they do not have this program, so, I decided to use Adobe Premier Pro, therefore, this program have a lot of render problems and at finally I had to use After Effects.

With the After Effects is more complicated compose a five minutes short, because AE is an special effects program, non and editor. But how I had not option I did it. On the other hand, it was good in order to add my special effects like fire and smoke, to do the final color adjustments and the time remapping.

Fig. 5.1 Edit line After Effects.
To animate with After effects I have to know a lot how works the keyframes options to make a good fades in/out. The keyframes are the points that you can see under the bars, then I only need to adjust every plane with the following and give continuity to my short.

5.2 Color Adjustment.

Finally my short, I had to adjust the light for every plane, at the beginning I have not to do this because all the planes are in the same set and with the same light. The problems was that sometimes, depends of the camera position and the camera movements I needed some extra light and I added it. For this the darkness and the brightness are different in some scenes. To fix this I only needed to go to the After effects, take the video, and go to the brightness and contrast to made the adjustments. About the color I did not retouch anything.

5.3 Music.

Remember that I did the soundtrack in the pre-production phase, for this, doing this part was very easy. I used Logic Pro to assemble all my music with the images. The only think that I had to do was take the original sound track and copy it to the final projects. The problem was that some thinks had been changed, and for this, I spent two days tweaking the music. Another important part was the voices, I wasted a lot of time fitting the mouth movements with the words, but at finally I think that the soundtrack, the hates part for my in audiovisual project is so good.

Fig. 5.2 Editing sound with Logic Pro.

I am absolutely in favor about the renewable energies, the forest protection, take care for the ozone layer, recycling, etc. For this reason I tried to waste and contaminate the lees possible during al my creation project.

I did all my pre-production using my computer in order to safe paper. In our society, you can do a tone of paper with fourth or five trees, with a tone of paper, in our globalization world, you can supply only a few persons. For this, when I started to do my work, I bought a Bamboo tablet in order to draw with my PC and wasted the less paper leaves possibles.

Is true that in some moments, to do for example initial sketches, I used paper. In that case I took recycled paper, where every tone avoids cutting down seven trees.

I have wasted the pages to print this final project in 250g paper, I think that we could deliver it using internet, but this is not my responsibility.

How I tall you I did all my short in my computer house, I have never had the necessity to go anywhere, for this, I did not contaminate using my car or any transport. I was totally clean in this aspect.

Finally, I have to speak about the computer anergy, Is true that I only use my machine to create the short, but I left it open a lot of days and night during the production. To do the energy consume is necessary know every part separately. After do the calculations for my computer and my screen, it waste approximately 160W per hour.

I search on internet and I find that use 1 KiloWatt hour of electricity generates 0.5453 Kg CO2. If I waste 160W per hours, during one day I use 3830W, or the same, 3.8KW, more than 2kg CO2 in the air every day. Now, Multiple this for fourth mounts project and the final contamination result is 240kg Co2. This is not a lot in our globalization world, so, I contaminate little.

The property is all the rights that my final audiovisual product have in order to be protected against copying and plans under the law.

In my case I have not a lot of thinks to put in this part because all the project. Since the first draw until the end result is make by me, I did not use external projects or thinks with copyright.

Finish my product I put it on the YouTube below a Creative Commons protection. In this way I have all the rights if someone decide to use my video for promotional, learning, etc.

About my used material I have to say that a few draws in the preproduction process are not make about my. The cartoonist name is Jordi Giró, a friend that accepts to draw for my all this images without copyright. I can do all that I want with this. On the other hand in the music part, I used a copyright music during 12 seconds, the music is and old west song take it for the film “The good, the bad and the ugly” created by Ennio Morricone. Until today, I do not have the intention to present my short to competitions, but, is certainly than a big job like this deserves more ways to follow. Therefore, I am deciding to pay for this seconds or changing this song for another.