



Departament d'Enginyeria de Serveis
i Sistemes d'Informació

UNIVERSITAT POLITÈCNICA DE CATALUNYA
BARCELONATECH

Survey on Requirements Engineering and Conceptual Modeling in Practice

Questionnaire & Results

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Questionnaire

Questionnaire

Requirements engineering
In practice



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This questionnaire aims to collect opinions of students from the Barcelona School of Informatics (FIB) who attended the Requirements Engineering course and that have participated in professional software development projects. The views collected will be used exclusively for a study undertaken at the *Polytechnic University of Catalonia* - BarcelonaTech that aims to see what could be done to improve the requirements engineering practice and to improve the education in requirements engineering.

We estimate that the average response time of the survey is around 20-25 minutes.

1. Profile

1.1. The Requirements Engineering course has been taught at the FIB from course 2005/06. How many years ago would you say that did you attended it?

Two or less Three Four Five Six or more

1.2. Please tell in how many professional software development projects have you participated, in which the task of requirements engineering was (or should have been) important:

None 1 2 3 More than 3

2. Stakeholders' objectives

Here we pretend to know the extent to which in practice the objectives and main benefits of stakeholders are determined and made public, those that stakeholders (promoters, customers, users, developers) expect to achieve with the operation and use of the system to be developed. We refer only to those cases where it makes sense to define objectives a priori.

2.1. In general, in the projects in which you have participated, the objectives to be achieved by the use of the system were defined explicitly and with a minimum level of quality:

Never Rarely Sometimes Often Always

→ *If the answer is "often" or "always" then you can go to Question 2.5*

2.2. What are the reasons why the objectives were not explicitly defined in the projects in which you have participated:

2.2.1. It was considered that the explicit definition of the objectives was unnecessary:

Never Rarely Sometimes Often Always

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2.2.2. There was an explicit definition of objectives, but was not known to all interested parties:

Never Rarely Sometimes Often Always

2.2.3. It was considered that it was too difficult to define well the objectives:

Never Rarely Sometimes Often Always

2.2.4. It was considered that the cost of defining the objectives was not justified by the expected benefits:

Never Rarely Sometimes Often Always

2.2.5. Stakeholders preferred to indicate the systems requirements of the system they wanted, rather than the objectives they wanted to achieve with the system:

Never Rarely Sometimes Often Always

2.2.6. Other causes that were an influence

2.3. Next we ask if you think the fact of NOT explicitly defining the objectives in the projects in which you have participated, has had the following consequences:

2.3.1. Problems in the development of the project:

Never Rarely Sometimes Often Always

2.3.2. Lack of satisfaction with the outcome of the project:

Never Rarely Sometimes Often Always

2.3.3. Little exploration of other potential solutions to reach the possible objectives:

Nothing Short Neutral Quite Much

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2.3.4. Other consequences:

2.4. In those projects in which the objectives were not explicitly defined, would you have recommended their explicit definition, considering the situation and the resources available at that time?

Never Rarely Sometimes Often Always

2.5. In general, do you think the training received at FIB on the definition of objectives has been helpful in your professional practice?

Nothing Short Neutral Quite Much

2.6. In general, do you agree that requirements engineering students should learn in depth what are the objectives and how to define them?

Nothing Short Neutral Quite Much

3. Use cases

Here we pretend to know the extent to which in practice use cases of the system are defined. We refer only to those projects where it makes sense to define use cases.

3.1. In general, in the projects in which you have participated, use cases have been defined with a minimum level of quality:

Never Rarely Sometimes Often Always

→ *If the answer is "often" or "always" then you can go to Question 3.5*

3.2. Next we ask you what are the reasons why the use cases were NOT explicitly defined in the projects in which you have participated:

3.2.1. The methodology used did not require the definition of use cases:

Never Rarely Sometimes Often Always

3.2.2. It was considered that it was too difficult to define well the use cases:

Never Rarely Sometimes Often Always

3.2.3. Stakeholders considered unnecessary to define use cases or did not consider it economically justifiable:

Never Rarely Sometimes Often Always

3.2.4. There was an implicit definition of use cases:

Never Rarely Sometimes Often Always

3.2.5. There were not adequate tools to define use cases:

Never Rarely Sometimes Often Always

3.2.6. Other causes that were an influence

3.3. In those projects in which the use cases were not explicitly defined, would you have recommended their explicit definition, considering the situation and the resources available at that time?

Never Rarely Sometimes Often Always

3.4. Next we ask what would have ensured that stakeholders and developers would have found it necessary and useful to define the use cases:

3.4.1. Knowing what use cases are and how to define them:

Never Rarely Sometimes Often Always

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3.4.2. To be convinced of the need of use cases for the development of systems:

Never Rarely Sometimes Often Always

3.4.3. To have available more adequate tools to define use cases:

Never Rarely Sometimes Often Always

3.4.4. Other causes that were an influence

3.5. In general, do you think the training received at FIB on the definition of use cases has been helpful in your professional practice?

Nothing Short Neutral Quite Much

3.6. In general, do you agree that requirements engineering students should learn in depth what are the use cases and how to define them?

Nothing Short Neutral Quite Much

4. Quality requirements

Here we pretend to know the extent to which in practice the quality requirements of the system are defined. Quality requirements are also known as non-functional requirements (appearance, usability, performance, etc.). We refer only to those projects where it makes sense to define quality requirements.

4.1. In general, in the projects in which you have participated, quality requirements have been defined with a minimum level of quality:

Never Rarely Sometimes Often Always

→ *If the answer is "often" or "always" then you can go to Question 4.5*

4.2. Next we ask you what are the reasons why quality requirements were NOT defined in the projects in which you have participated:

4.2.1. The methodology used did not require the definition of quality requirements:

Never Rarely Sometimes Often Always

4.2.2. It was considered that it was too difficult to define well the quality requirements:

Never Rarely Sometimes Often Always

4.2.3. Stakeholders considered unnecessary to define quality requirements or did not considered it economically justifiable:

Never Rarely Sometimes Often Always

4.2.4. There was an implicit definition of quality requirements:

Never Rarely Sometimes Often Always

4.2.5. There were not adequate tools to define quality requirements:

Never Rarely Sometimes Often Always

4.2.6. Other causes that were an influence

4.3. In those projects in which the quality requirements were not defined, would you have recommended their definition, considering the situation and the resources available at that time?

Never Rarely Sometimes Often Always

4.4. Next we ask what would have ensured that stakeholders and developers would have found it necessary and useful to define the quality requirements:

4.4.1. Knowing what quality requirements are and how to define them:

Never Rarely Sometimes Often Always

4.4.2. To be convinced of the need of quality requirements for the development of systems:

Never Rarely Sometimes Often Always

4.4.3. To have available more adequate tools to define quality requirements:

Never Rarely Sometimes Often Always

4.4.4. Other:

4.5. In general, do you think the training received at FIB on the definition of quality requirements has been helpful in your professional practice?

Nothing Short Neutral Quite Much

4.6. In general, do you agree that requirements engineering students should learn in depth what are quality requirements and how to define them?

Nothing Short Neutral Quite Much

5. Glossary

Here we pretend to know the extent to which in practice the glossary of the project is defined, containing the definition in natural language of all the names used in the project or for the system. We refer only to those projects where it makes sense to define the glossary.

5.1. In general, in the projects in which you have participated, the project glossary has been defined with a minimum level of quality:

Never Rarely Sometimes Often Always

→ *If the answer is "often" or "always" then you can go to Question 5.5*

5.2. Next we ask you what are the reasons why the glossary was NOT defined in the projects in which you have participated:

5.2.1. The methodology used did not require the definition of a glossary:

Never Rarely Sometimes Often Always

5.2.2. It was too difficult to define the glossary:

Never Rarely Sometimes Often Always

5.2.3. Stakeholders considered unnecessary to define the glossary or did not consider it economically justifiable:

Never Rarely Sometimes Often Always

5.2.4. It was assumed that stakeholders knew well enough the names that were used:

Never Rarely Sometimes Often Always

5.2.5. There were not adequate tools to define the glossary:

Never Rarely Sometimes Often Always

5.2.6. Other causes that were an influence

5.3. In those projects in which the glossary was not defined, would you have recommended its definition, considering the situation and the resources available at that time?

Never Rarely Sometimes Often Always

5.4. Next we ask what would have ensured that stakeholders and developers would have found it necessary and useful to define the glossary:

5.4.1. Knowing what the glossary is and how to define it:

Never Rarely Sometimes Often Always

5.4.2. To be convinced of the need of defining a glossary for the development of systems:

Never Rarely Sometimes Often Always

5.4.3. To have available more adequate tools to define the glossary:

Never Rarely Sometimes Often Always

5.4.4. Other:

5.5. In general, do you think the training received at FIB on the definition of glossaries has been helpful in your professional practice?

Never Rarely Sometimes Often Always

5.6. In general, do you agree that requirements engineering students should learn in depth the importance of defining the glossary and how to do it?

Never Rarely Sometimes Often Always

6. Structural conceptual schema

Here we pretend to know the extent to which in practice the structural conceptual schema is defined. It is also known as conceptual model or class diagram (UML, ER, etc.). We refer only to those projects where it makes sense to define the structural conceptual schema.



6.1. In general, in the projects in which you have participated, the structural conceptual schema of the system has been defined with a minimum level of quality:

Never Rarely Sometimes Often Always

→ *If the answer is "often" or "always" then you can go to section 6.5*

6.2. Next we ask you what are the reasons why the structural conceptual schema was NOT defined in the projects in which you have participated:

6.2.1. The methodology used did not require the definition of a structural conceptual schema:

Never Rarely Sometimes Often Always

6.2.2. It was considered that it was too difficult to define well the structural conceptual schema:

Never Rarely Sometimes Often Always

6.2.3. Stakeholders considered unnecessary to define the structural conceptual schema or did not considered it economically justifiable:

Never Rarely Sometimes Often Always

6.2.4. It was assumed that stakeholders already knew implicitly the structural conceptual schema:

Never Rarely Sometimes Often Always

6.2.5. There were not adequate tools to define the structural conceptual schema:

Never Rarely Sometimes Often Always

6.2.6. Other causes that were an influence

6.3. In those projects in which the structural conceptual schema was not defined, would you have recommended their definition, considering the situation and the resources available at that time?

Never Rarely Sometimes Often Always

6.4. Next we ask what would have ensured that stakeholders and developers would have found it necessary and useful to define the structural conceptual schema:

6.4.1. Knowing what the structural conceptual schema is and how to define it:

Never Rarely Sometimes Often Always

6.4.2. To be convinced of the need of defining the structural conceptual schema for the development of systems:

Never Rarely Sometimes Often Always

6.4.3. To have available more adequate tools to define the structural conceptual schema:

Never Rarely Sometimes Often Always

6.4.4. Other:

6.5. In general, do you think the training received at FIB on the definition of the structural conceptual schema has been helpful in your professional practice?

Never Rarely Sometimes Often Always

6.6. In general, do you agree that requirements engineering students should learn in depth the importance of defining the structural conceptual schema and how to do it?

Never Rarely Sometimes Often Always

7. Integrity constraints

Here we pretend to know the extent to which in practice the integrity constraints which do not appear in the structural conceptual schema are defined. In UML they are called invariants, and can be defined in natural language or in a formal language (such as OCL). We refer only to those projects where it makes sense to define these integrity constraints.

7.1. In general, in the projects in which you have participated, the integrity constraints of the system were defined:

Never Rarely Sometimes Often Always

→ *If the answer is "often" or "always" then you can go to section 7.5*

7.2. Next we ask you what are the reasons why the integrity constraints were NOT defined in the projects in which you have participated:

7.2.1. The methodology used did not require the definition of integrity constraints:

Never Rarely Sometimes Often Always

7.2.2. It was considered that it was too difficult to define well the integrity constraints:

Never Rarely Sometimes Often Always

7.2.3. Stakeholders considered unnecessary to define the integrity constraints or did not considered it economically justifiable:

Never Rarely Sometimes Often Always

7.2.4. It was assumed that stakeholders already knew implicitly the integrity constraints:

Never Rarely Sometimes Often Always

7.2.5. There were not adequate tools to define the integrity constraints:

Never Rarely Sometimes Often Always

7.2.6. Other causes that were an influence

7.3. In those projects in which the integrity constraints were not defined, would you have recommended its definition, considering the situation and the resources available at that time?

Never Rarely Sometimes Often Always

7.4. Next we ask what would have ensured that stakeholders and developers would have found it necessary and useful to define the integrity constraints:

7.4.1. Knowing what the integrity constraints are and how to define them:

Never Rarely Sometimes Often Always

7.4.2. To be convinced of the need of defining the integrity constraints for the development of systems:

Never Rarely Sometimes Often Always

7.4.3. To have available more adequate tools to define the integrity constraints:

Never Rarely Sometimes Often Always

7.4.4. Other:

7.5. In general, do you think the training received at FIB on the definition of integrity constraints has been helpful in your professional practice?

Nothing Short Neutral Quite Much

7.6. In general, do you agree that requirements engineering students should learn in depth the importance of defining the integrity constraints and how to do it?

Nothing Short Neutral Quite Much

8. Behavioural conceptual schema

Here we pretend to know the extent to which in practice the behavioural conceptual schema is defined, be it through events, system operations or state transition diagrams. We refer only to those projects where it makes sense to define the behavioural conceptual schema.

8.1. In general, in the projects in which you have participated, the behavioural conceptual schema of the system has been defined with a minimum level of quality:

Never Rarely Sometimes Often Always

→ *If the answer is "often" or "always" then you can go to question 8.5*

8.2. Next we ask you what are the reasons why the behavioural conceptual schema was NOT defined in the projects in which you have participated:

8.2.1. The methodology used did not require the definition of a behavioural conceptual schema:

Never Rarely Sometimes Often Always

8.2.2. It was considered that it was too difficult to define well the behavioural conceptual schema:

Never Rarely Sometimes Often Always

8.2.3. Stakeholders considered unnecessary to define the behavioural conceptual schema or did not considered it economically justifiable:

Never Rarely Sometimes Often Always

8.2.4. It was assumed that stakeholders already knew implicitly the behavioural conceptual schema:

Never Rarely Sometimes Often Always



8.2.5. There were not adequate tools to define the behavioural conceptual schema:

- Never Rarely Sometimes Often Always

8.2.6. Other causes that were an influence

8.3. In those projects in which the behavioural conceptual schema was not defined, would you have recommended their definition, considering the situation and the resources available at that time?

- Never Rarely Sometimes Often Always

8.4. Next we ask what would have ensured that stakeholders and developers would have found it necessary and useful to define the behavioural conceptual schema:

8.4.1. Knowing what the behavioural conceptual schema is and how to define it:

- Never Rarely Sometimes Often Always

8.4.2. To be convinced of the need of defining the behavioural conceptual schema for the development of systems:

- Never Rarely Sometimes Often Always

8.4.3. To have available more adequate tools to define the behavioural conceptual schema:

- Never Rarely Sometimes Often Always

8.4.4. Other:

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8.5. In general, do you think the training received at FIB on the definition of the behavioural conceptual schema has been helpful in your professional practice?

Nothing Short Neutral Quite Much

8.6. In general, do you agree that requirements engineering students should learn in depth the importance of defining the behavioural conceptual schema and how to do it?

Nothing Short Neutral Quite Much

9. Contact data

Optionally, as the last step of the survey, if you want to leave your name and email address this would be useful for us if we ever have the need to contact you to know more about your opinion or to send you information about this study.

9.1. Name:

9.2. Email address:

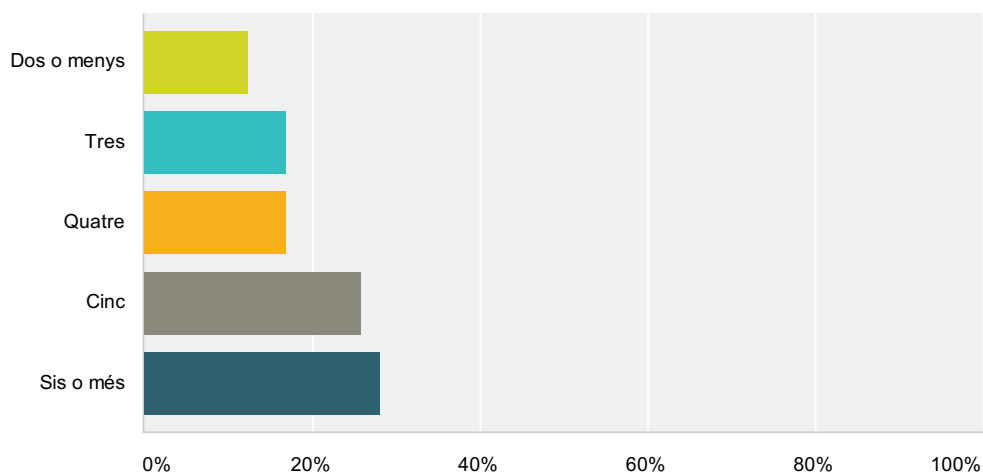
9.3. Would you be willing to participate in a meeting of no more than two hours for a group discussion on the answers to this questionnaire?

Yes No

Results

Q1 L'assignatura d'Enginyeria de Requisits es va començar a impartir a la FIB a partir del curs 2005/06. Quants anys diries que fa que la vas cursar tu?

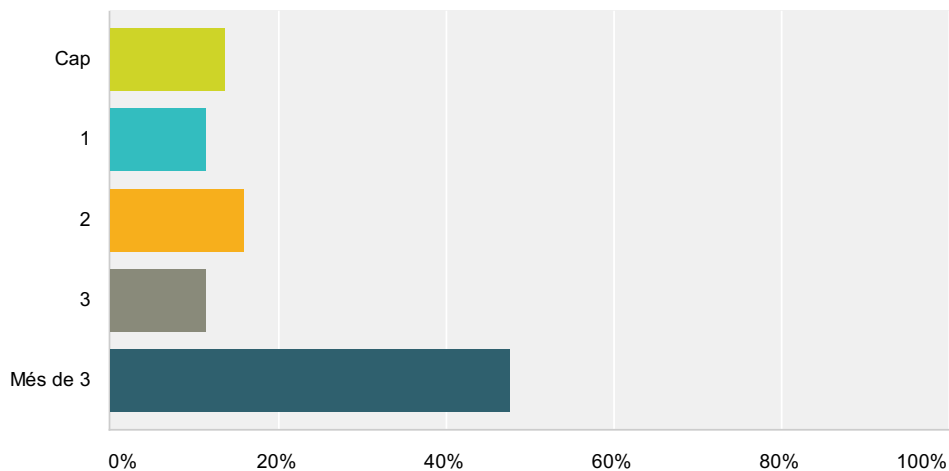
Respondido: 89 Omitido: 5



Opciones de respuesta	Respuestas
Dos o menys	12,36% 11
Tres	16,85% 15
Quatre	16,85% 15
Cinc	25,84% 23
Sis o més	28,09% 25
Total	89

Q2 Per favor, digues en quants projectes professionals de desenvolupament de software has participat, en els quals la tasca d'enginyeria de requisits fou (o havia d'haver estat) important:

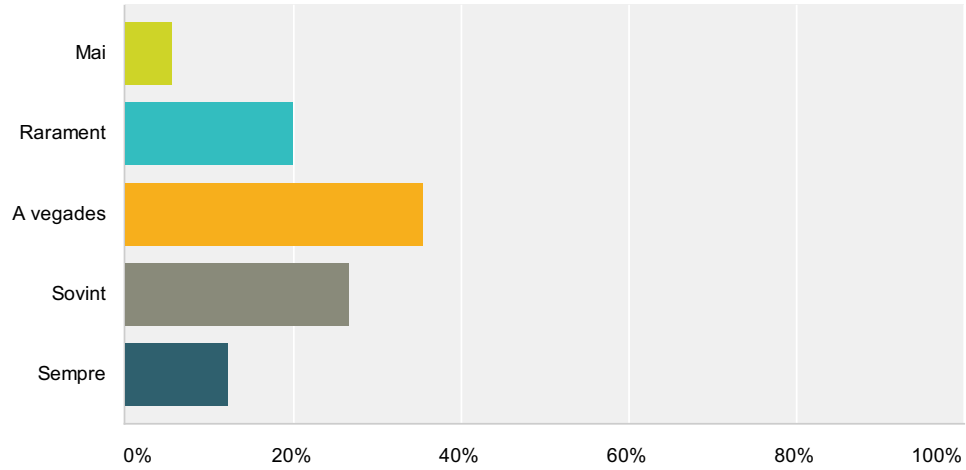
Respondido: 88 Omitido: 6



Opciones de respuesta	Respuestas	
Cap	13,64%	12
1	11,36%	10
2	15,91%	14
3	11,36%	10
Más de 3	47,73%	42
Total		88

Q3 En general, en els projectes en què has participat, els objectius que es pretenien assolir amb l'ús del sistema es van definir explícitament i amb un nivell mínim de qualitat:

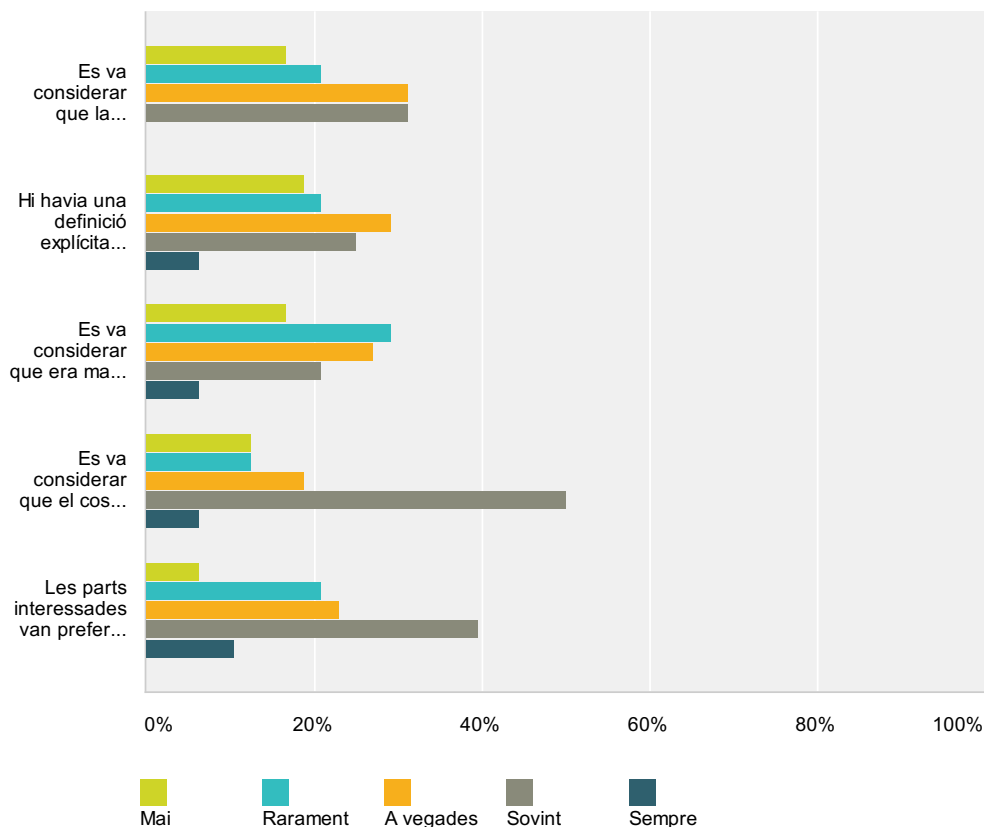
Respondido: 90 Omitido: 4



Opciones de respuesta	Respuestas
Mai	5,56% 5
Rarament	20% 18
A vegades	35,56% 32
Sovint	26,67% 24
Sempre	12,22% 11
Total	90

Q4 A continuació, demanem quines són les causes per les quals NO es van definir explícitament els objectius en els projectes en què has participat:

Respondido: 48 Omitido: 46



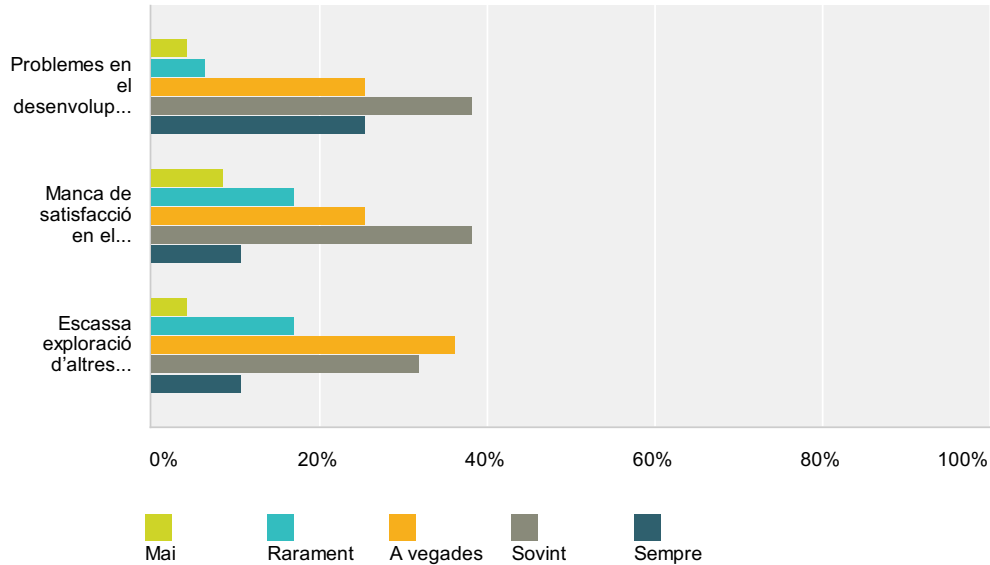
	Mai	Rarament	A vegades	Sovint	Sempre	Total
Es va considerar que la definició explícita d'objectius era innecessària:	16,67% 8	20,83% 10	31,25% 15	31,25% 15	0% 0	48
Hi havia una definició explícita d'objectius, però no eren coneguts per totes les parts interessades:	18,75% 9	20,83% 10	29,17% 14	25% 12	6,25% 3	48
Es va considerar que era massa difícil definir bé els objectius:	16,67% 8	29,17% 14	27,08% 13	20,83% 10	6,25% 3	48
Es va considerar que el cost de definir-los no estava justificat pels beneficis que se n'esperava obtenir:	12,50% 6	12,50% 6	18,75% 9	50% 24	6,25% 3	48

Investigació sobre la formació i l'ús a la pràctica de l'Enginyeria de Requisits

Les parts interessades van preferir indicar els requisits concrets que volien del sistema més que no pas els objectius que elles volien assolir amb el sistema:	6,25% 3	20,83% 10	22,92% 11	39,58% 19	10,42% 5	48

Q5 A continuació, demanem si creus que el fet de NO haver definit explícitament els objectius en els projectes en què has participat, va tenir les següents conseqüències:

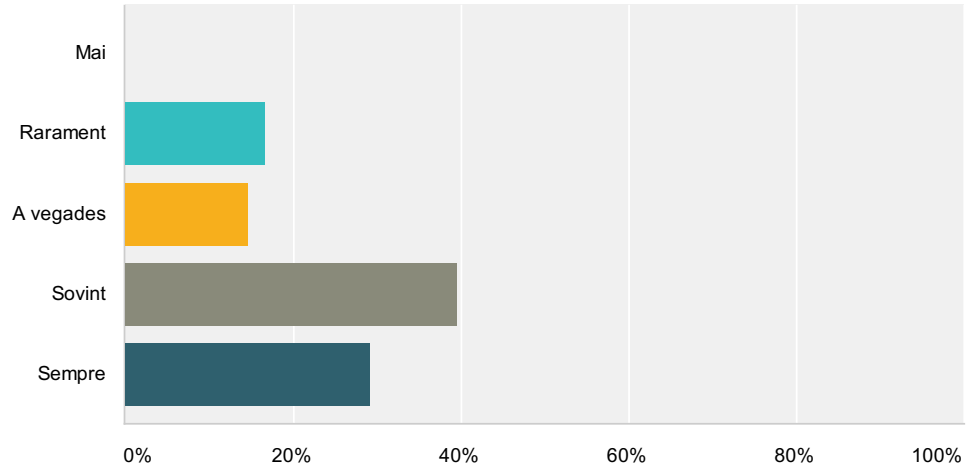
Respondido: 47 Omitido: 47



	Mai	Rarament	A vegades	Sovint	Sempre	Total
Problemes en el desenvolupament del projecte:	4,26% 2	6,38% 3	25,53% 12	38,30% 18	25,53% 12	47
Manca de satisfacció en el resultat final del projecte:	8,51% 4	17,02% 8	25,53% 12	38,30% 18	10,64% 5	47
Escassa exploració d'altres solucions potencials per assolir els possibles objectius:	4,26% 2	17,02% 8	36,17% 17	31,91% 15	10,64% 5	47

Q6 En aquells projectes en els quals no es van definir explícitament els objectius, hauries recomanat fer-ho tenint en compte la situació i els recursos disponibles en aquell moment?

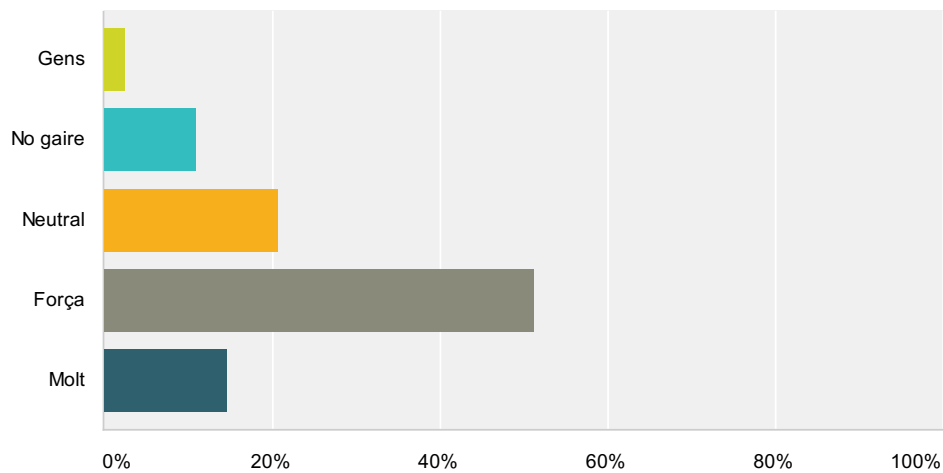
Respondido: 48 Omitido: 46



Opciones de respuesta	Respuestas
Mai	0% 0
Rarament	16,67% 8
A vegades	14,58% 7
Sovint	39,58% 19
Sempre	29,17% 14
Total	48

Q7 En general, creus que la formació rebuda a la FIB en definició d'objectius ha estat útil en la teva pràctica professional?

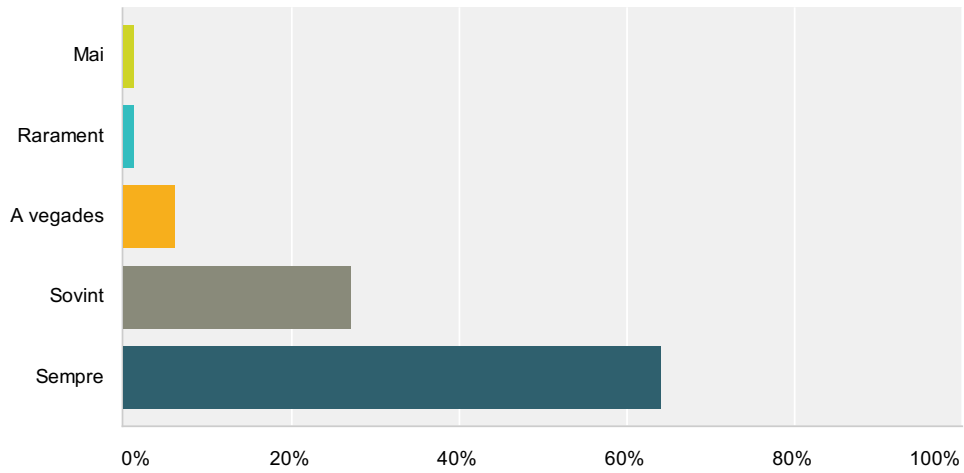
Respondido: 82 Omitido: 12



Opciones de respuesta	Respuestas
Gens	2,44% 2
No gaire	10,98% 9
Neutral	20,73% 17
Força	51,22% 42
Molt	14,63% 12
Total	82

Q8 En general, estàs d'acord que els estudiants d'enginyeria de requisits han d'aprendre a fons què són els objectius dels projectes i com definir-los?

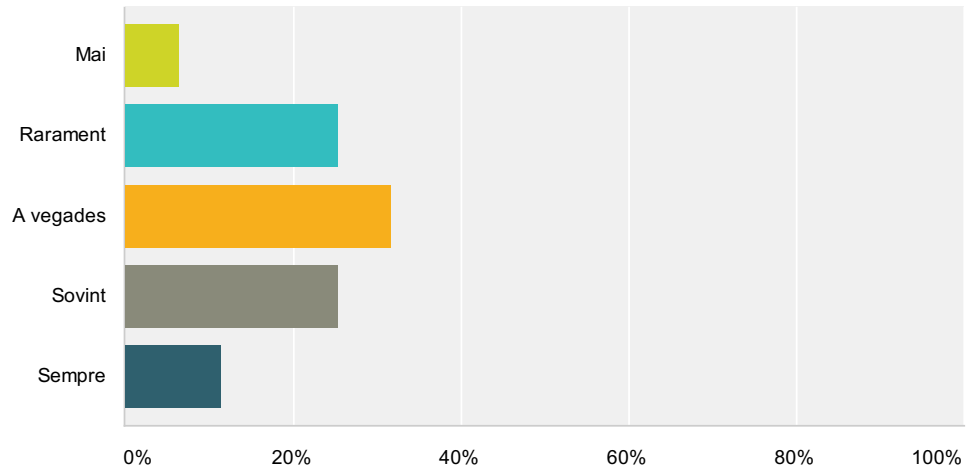
Respondido: 81 Omitido: 13



Opciones de respuesta	Respuestas
Mai	1,23% 1
Rarament	1,23% 1
A vegades	6,17% 5
Sovint	27,16% 22
Sempre	64,20% 52
Total	81

Q9 En general, en els projectes en què has participat, els casos d'ús s'han definit (amb un nivell mínim de qualitat):

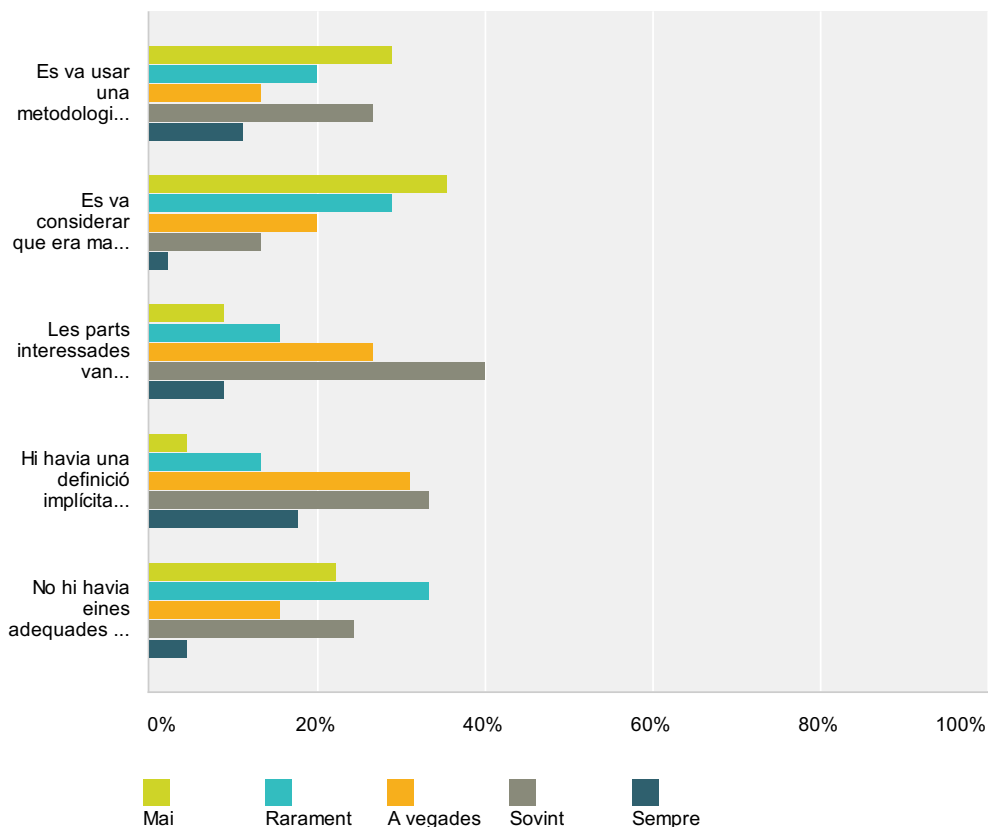
Respondido: 79 Omitido: 15



Opciones de respuesta	Respuestas	
Mai	6,33%	5
Rarament	25,32%	20
A vegades	31,65%	25
Sovint	25,32%	20
Sempre	11,39%	9
Total		79

Q10 A continuació, demanem quines són les causes per les quals NO es van definir els casos d'ús en els projectes en què has participat:

Respondido: 45 Omitido: 49



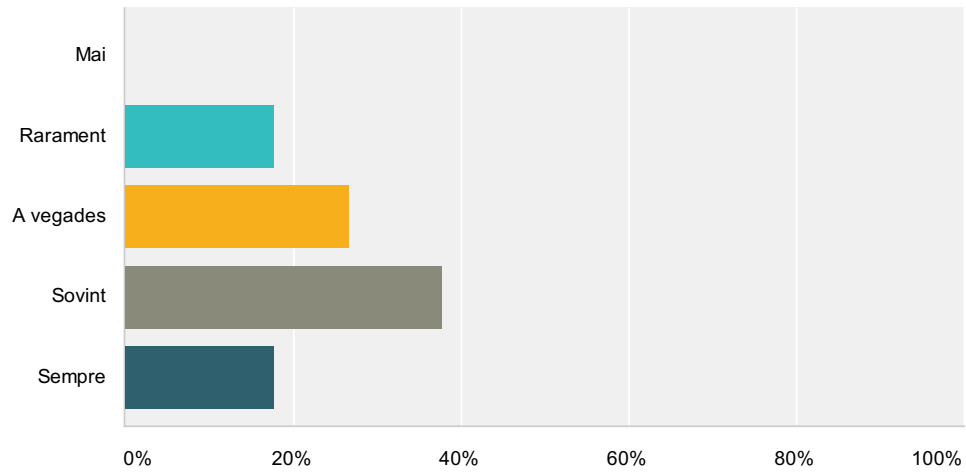
	Mai	Rarament	A vegades	Sovint	Sempre	Total
Es va usar una metodologia que no requeria la definició dels casos d'ús	28,89% 13	20% 9	13,33% 6	26,67% 12	11,11% 5	45
Es va considerar que era massa difícil definir bé els casos d'ús:	35,56% 16	28,89% 13	20% 9	13,33% 6	2,22% 1	45
Les parts interessades van considerar innecessari definir els casos d'ús o no ho van considerar econòmicament justificable:	8,89% 4	15,56% 7	26,67% 12	40% 18	8,89% 4	45
Hi havia una definició implícita dels casos d'ús:	4,44% 2	13,33% 6	31,11% 14	33,33% 15	17,78% 8	45

Investigació sobre la formació i l'ús a la pràctica de l'Enginyeria de Requisits

No hi havia eines adequades per definir els casos d'ús:	22,22% 10	33,33% 15	15,56% 7	24,44% 11	4,44% 2	45

Q11 En els projectes en els qual no es van definir els casos d'ús, hauries recomanat de fer-ho, tenint en compte la situació i els recursos disponibles en aquell moment?

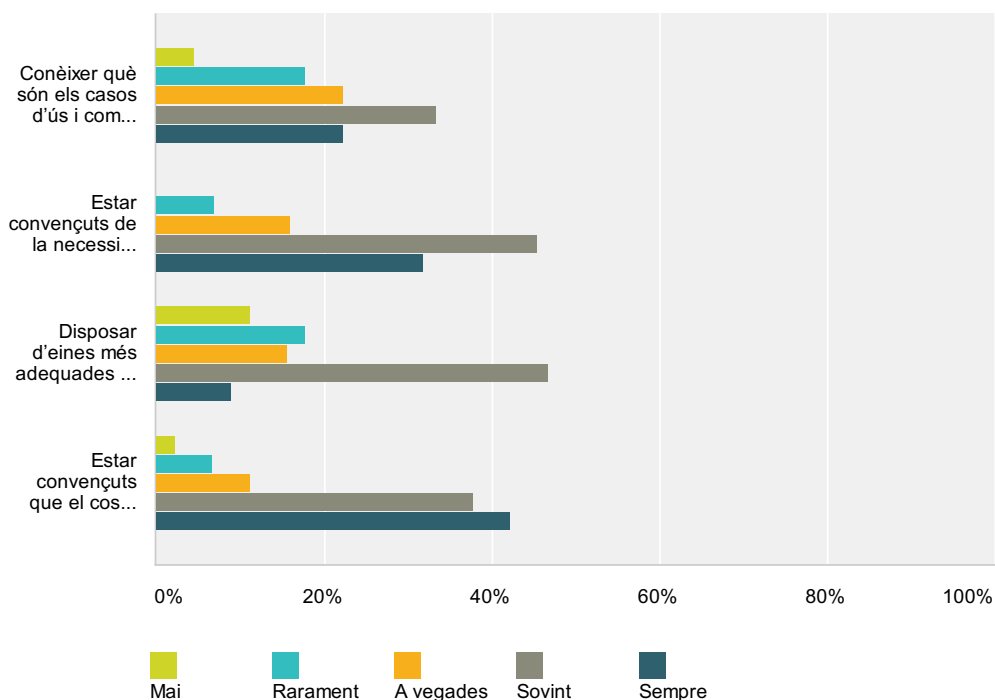
Respondido: 45 Omitido: 49



Opciones de respuesta	Respuestas
Mai	0% 0
Rarament	17,78% 8
A vegades	26,67% 12
Sovint	37,78% 17
Sempre	17,78% 8
Total	45

Q12 A continuació demanem què hauria calgut per tal que les parts interessades i els desenvolupadors haguessin considerat necessari i útil definir-los:

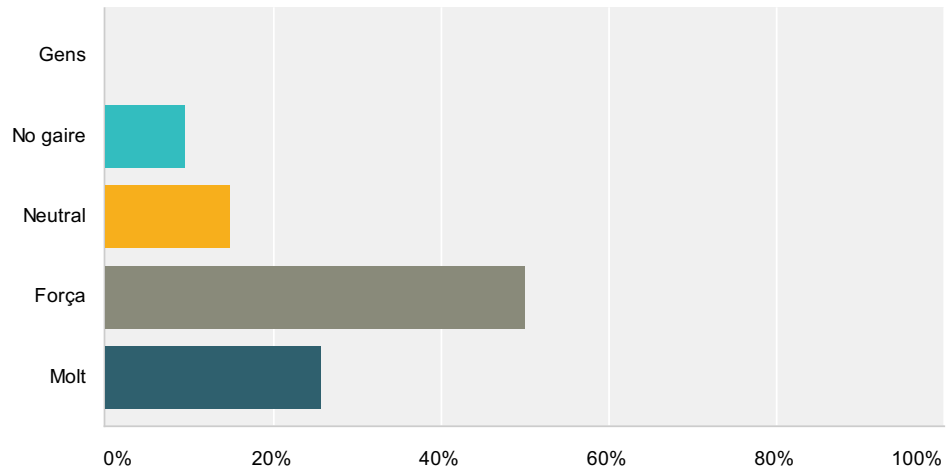
Respondido: 45 Omitido: 49



	Mai	Rarament	A vegades	Sovint	Sempre	Total
Conèixer què són els casos d'ús i com definir-los	4,44% 2	17,78% 8	22,22% 10	33,33% 15	22,22% 10	45
Estar convençuts de la necessitat dels casos d'ús per al desenvolupament de sistemes	0% 0	6,82% 3	15,91% 7	45,45% 20	31,82% 14	44
Disposar d'eines més adequades per a definir casos d'ús	11,11% 5	17,78% 8	15,56% 7	46,67% 21	8,89% 4	45
Estar convençuts que el cost de definir els casos d'ús val la pena	2,22% 1	6,67% 3	11,11% 5	37,78% 17	42,22% 19	45

Q13 En general, creus que la formació rebuda a la FIB en definició de casos d'ús ha estat útil en la teva pràctica professional?

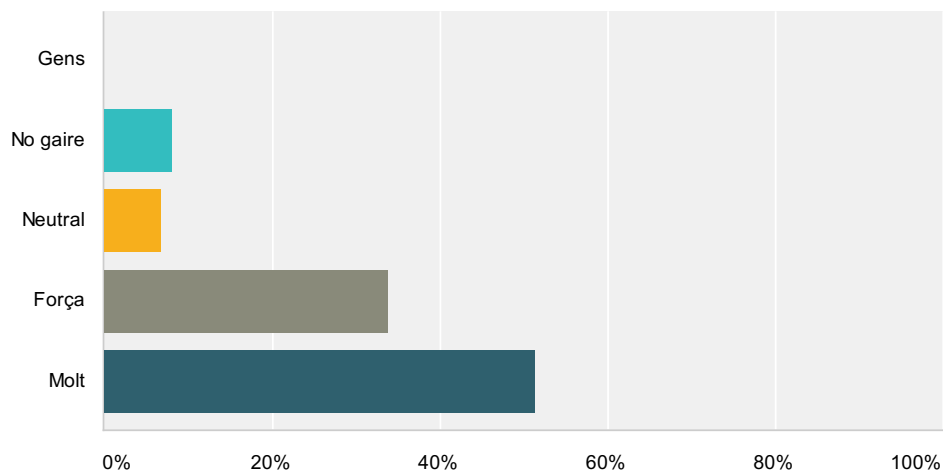
Respondido: 74 Omitido: 20



Opciones de respuesta	Respuestas
Gens	0% 0
No gaire	9,46% 7
Neutral	14,86% 11
Força	50% 37
Molt	25,68% 19
Total	74

Q14 En general, estàs d'acord que els estudiants d'enginyeria de requisits han d'aprendre a fons què són els casos d'ús, i com definir-los?

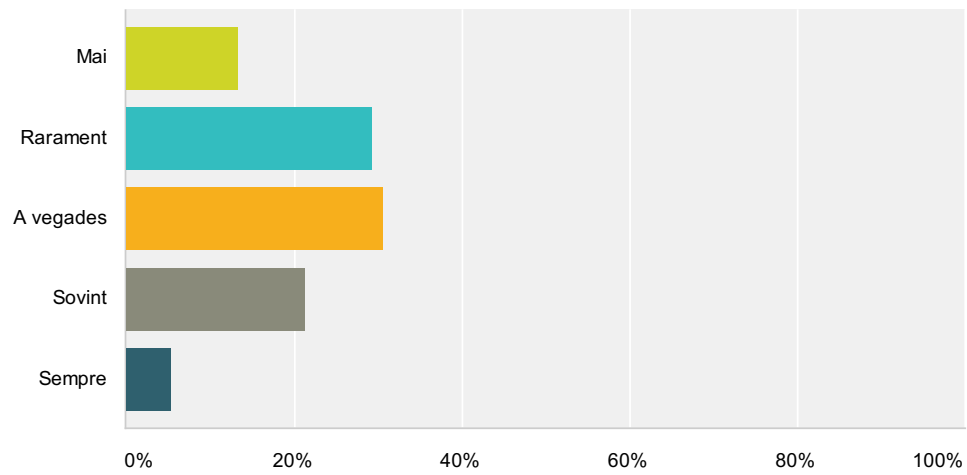
Respondido: 74 Omitido: 20



Opciones de respuesta	Respuestas
Gens	0% 0
No gaire	8,11% 6
Neutral	6,76% 5
Força	33,78% 25
Molt	51,35% 38
Total	74

Q15 En general, en els projectes en què has participat, els requisits qualitat del sistema es van definir (amb un nivell mínim de qualitat):

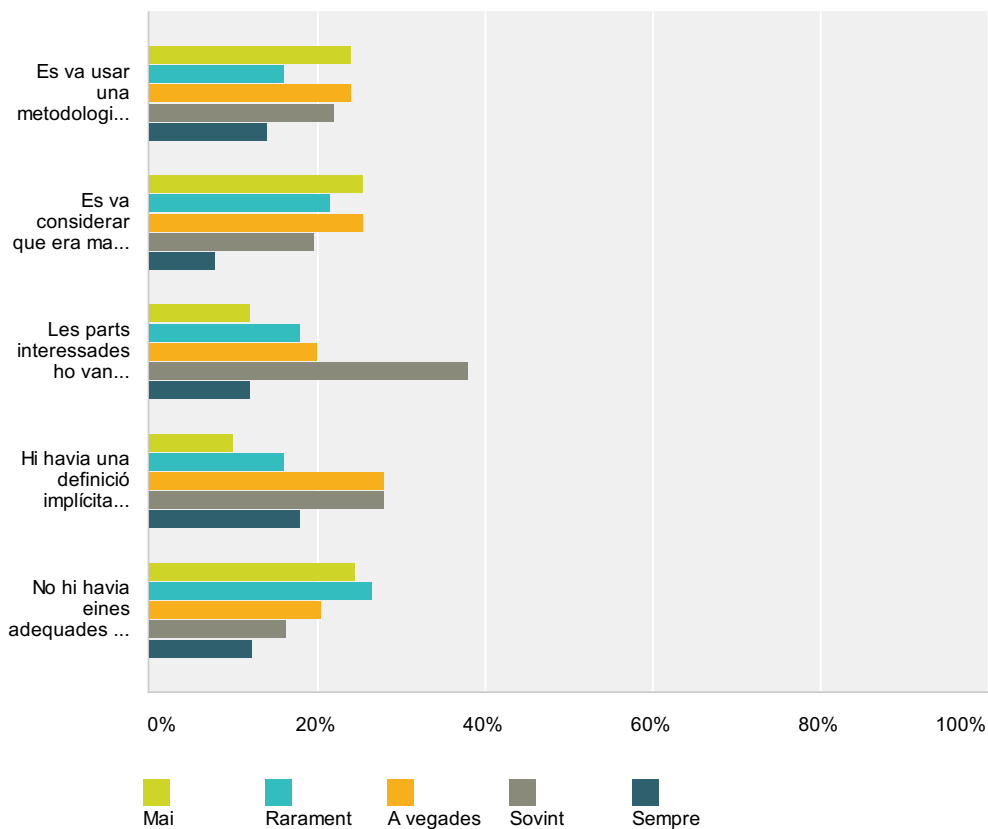
Respondido: 75 Omitido: 19



Opciones de respuesta	Respuestas
Mai	13,33% 10
Rarament	29,33% 22
A vegades	30,67% 23
Sovint	21,33% 16
Sempre	5,33% 4
Total	75

Q16 A continuació, demanem quines són les causes per les quals NO es van definir els requisits de qualitat en els projectes en què has participat:

Respondido: 51 Omitido: 43



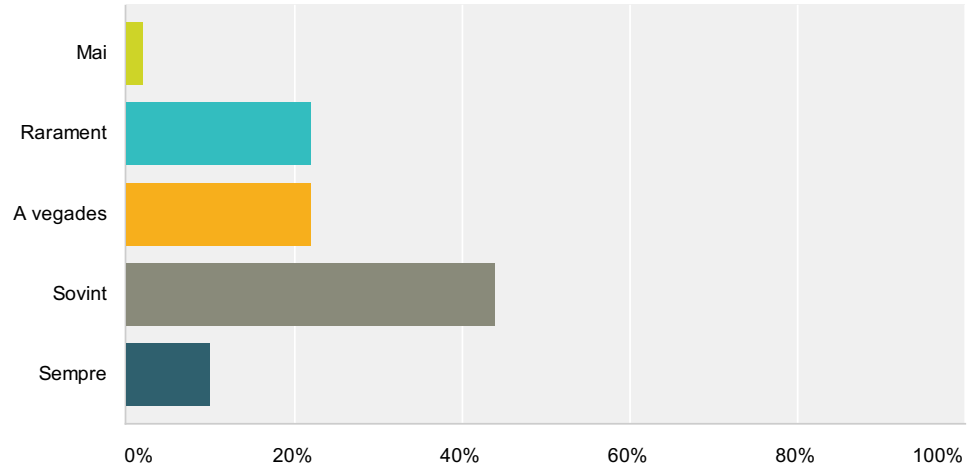
	Mai	Rarament	A vegades	Sovint	Sempre	Total
Es va usar una metodologia que no requeria la definició dels requisits de qualitat	24% 12	16% 8	24% 12	22% 11	14,00% 7	50
Es va considerar que era massa difícil definir bé els requisits de qualitat	25,49% 13	21,57% 11	25,49% 13	19,61% 10	7,84% 4	51
Les parts interessades ho van considerar innecessari o no ho van considerar econòmicament justificable	12% 6	18% 9	20% 10	38% 19	12% 6	50
Hi havia una definició implícita dels requisits de qualitat	10% 5	16% 8	28,00% 14	28,00% 14	18% 9	50

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No hi havia eines adequades per definir els requisits de qualitat	24,49% 12	26,53% 13	20,41% 10	16,33% 8	12,24% 6	49

Q17 En els projectes en els qual no es van definir els requisits de qualitat, hauries recomanat de fer-ho, tenint en compte la situació i els recursos disponibles en aquell moment?

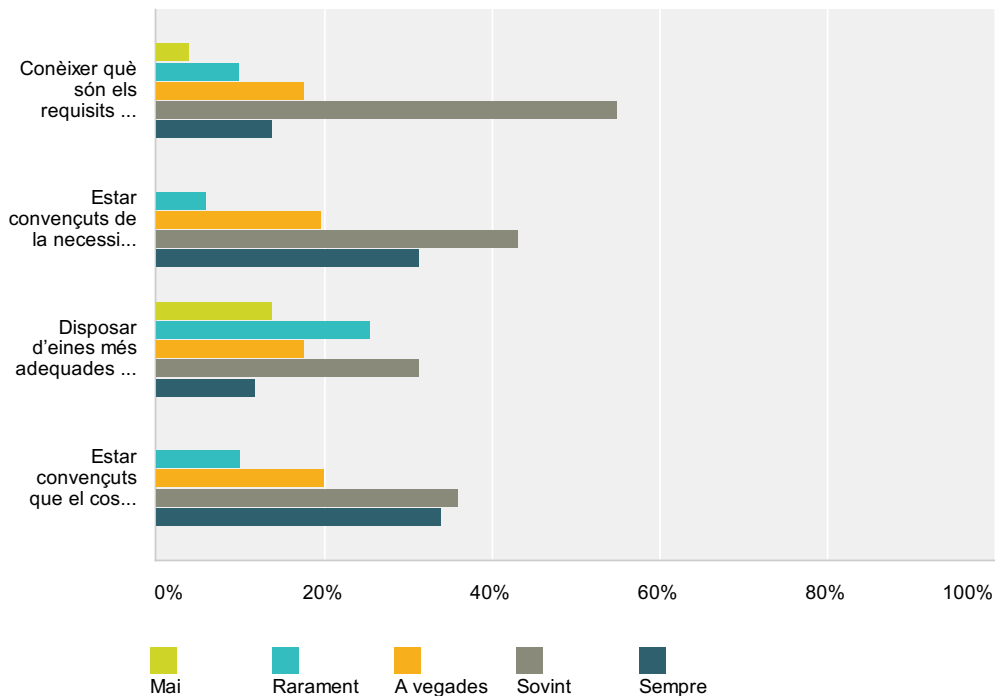
Respondido: 50 Omitido: 44



Opciones de respuesta	Respuestas
Mai	2% 1
Rarament	22% 11
A vegades	22% 11
Sovint	44% 22
Sempre	10% 5
Total	50

Q18 A continuació demanem què hauria calgut per tal que les parts interessades i els desenvolupadors haguessin considerat necessari i útil definir els requisits de qualitat:

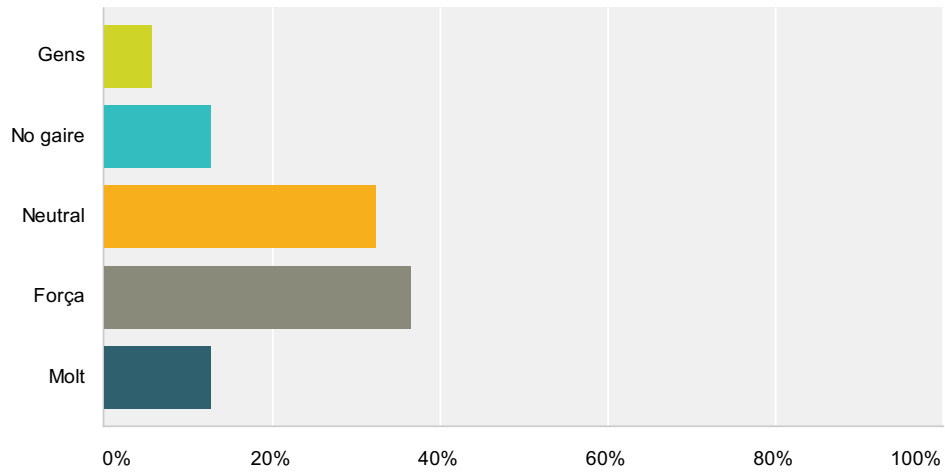
Respondido: 51 Omitido: 43



	Mai	Rarament	A vegades	Sovint	Sempre	Total
Conèixer què són els requisits de qualitat i com definir-los	3,92% 2	9,80% 5	17,65% 9	54,90% 28	13,73% 7	51
Estar convençuts de la necessitat de definir els requisits de qualitat per al desenvolupament de sistemes	0% 0	5,88% 3	19,61% 10	43,14% 22	31,37% 16	51
Disposar d'eines més adequades per a definir requisits de qualitat	13,73% 7	25,49% 13	17,65% 9	31,37% 16	11,76% 6	51
Estar convençuts que el cost de definir els requisits de qualitat val la pena	0% 0	10% 5	20% 10	36% 18	34% 17	50

Q19 En general, creus que la formació rebuda a la FIB en definició de requisits de qualitat ha estat útil en la teva pràctica professional?

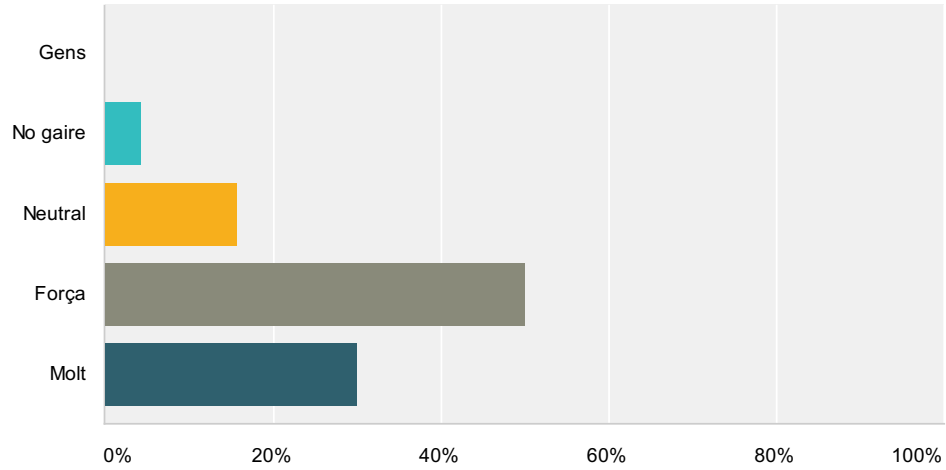
Respondido: 71 Omitido: 23



Opciones de respuesta	Respuestas
Gens	5,63% 4
No gaire	12,68% 9
Neutral	32,39% 23
Força	36,62% 26
Molt	12,68% 9
Total	71

Q20 En general, estàs d'acord que els estudiants d'enginyeria de requisits han de conèixer a fons la importància de la definició dels requisits de qualitat, i com fer-ho?

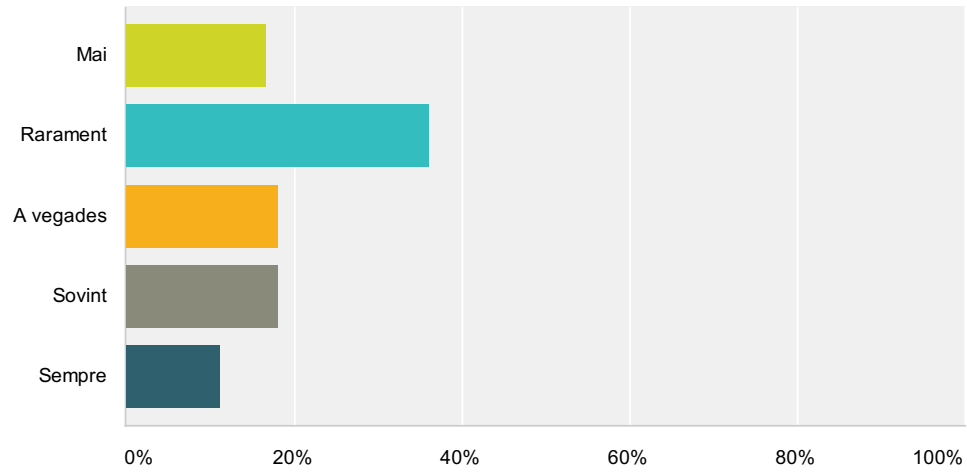
Respondido: 70 Omitido: 24



Opciones de respuesta	Respuestas
Gens	0% 0
No gaire	4,29% 3
Neutral	15,71% 11
Força	50% 35
Molt	30% 21
Total	70

Q21 En general, en els projectes en què has participat, el glossari del projecte es va definir (amb un nivell mínim de qualitat):

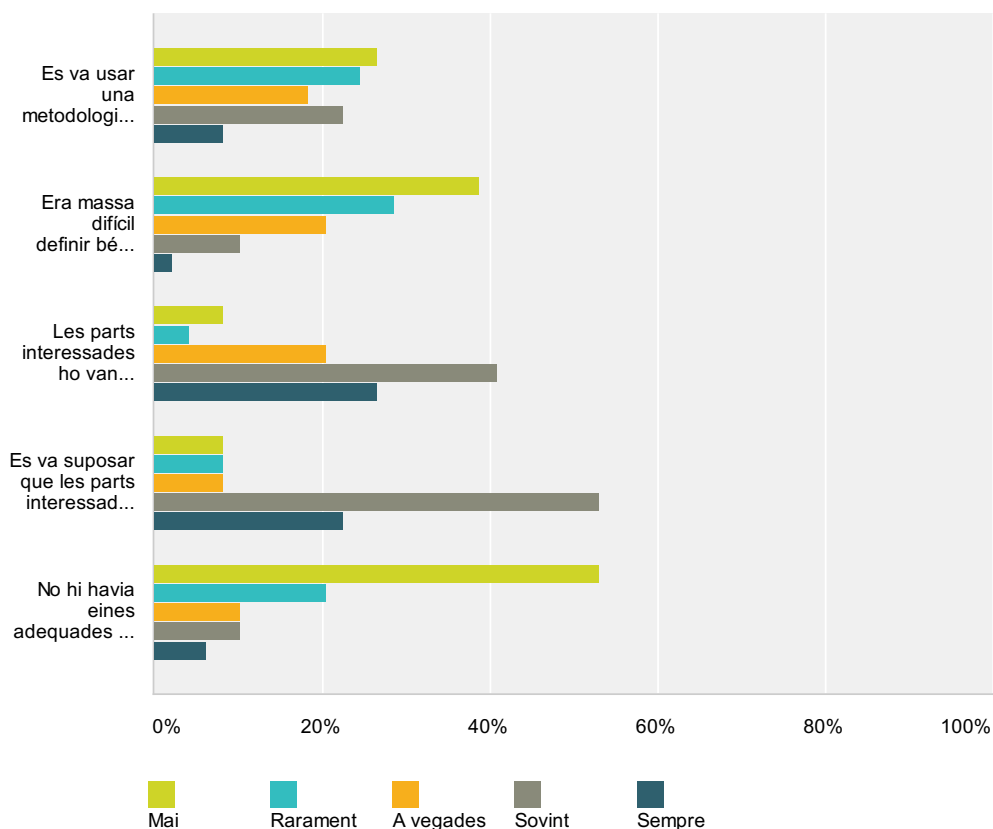
Respondido: 72 Omitido: 22



Opciones de respuesta	Respuestas
Mai	16,67% 12
Rarament	36,11% 26
A vegades	18,06% 13
Sovint	18,06% 13
Sempre	11,11% 8
Total	72

Q22 A continuació, demanem quines són les causes per les quals NO es va definir el glossari en els projectes en què has participat:

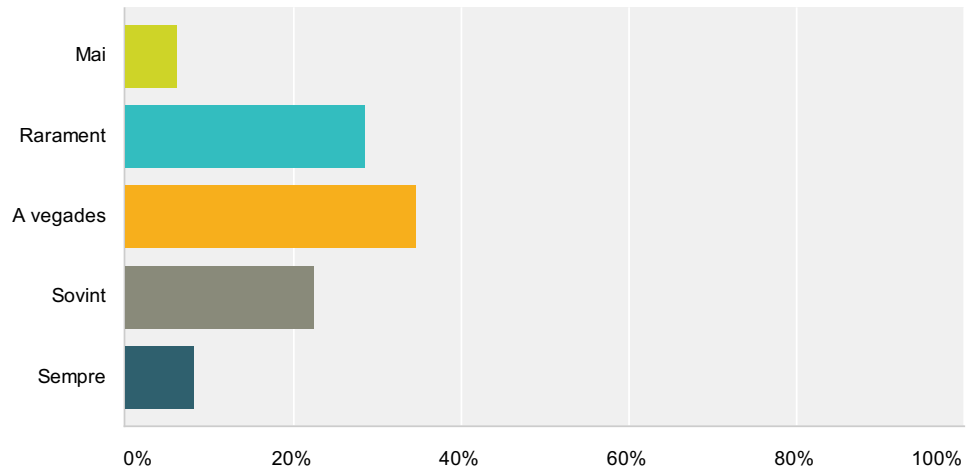
Respondido: 49 Omitido: 45



	Mai	Rarament	A vegades	Sovint	Sempre	Total
Es va usar una metodologia que no requeria la definició del glossari	26,53% 13	24,49% 12	18,37% 9	22,45% 11	8,16% 4	49
Era massa difícil definir bé el glossari	38,78% 19	28,57% 14	20,41% 10	10,20% 5	2,04% 1	49
Les parts interessades ho van considerar innecessari o no ho van considerar econòmicament justificable	8,16% 4	4,08% 2	20,41% 10	40,82% 20	26,53% 13	49
Es va suposar que les parts interessades ja coneixien prou bé tots els noms que s'usaven	8,16% 4	8,16% 4	8,16% 4	53,06% 26	22,45% 11	49
No hi havia eines adequades per definir el glossari	53,06% 26	20,41% 10	10,20% 5	10,20% 5	6,12% 3	49

Q23 En els projectes en els qual no es va definir el glossari, hauries recomanat de fer-ho, tenint en compte la situació i els recursos disponibles en aquell moment?

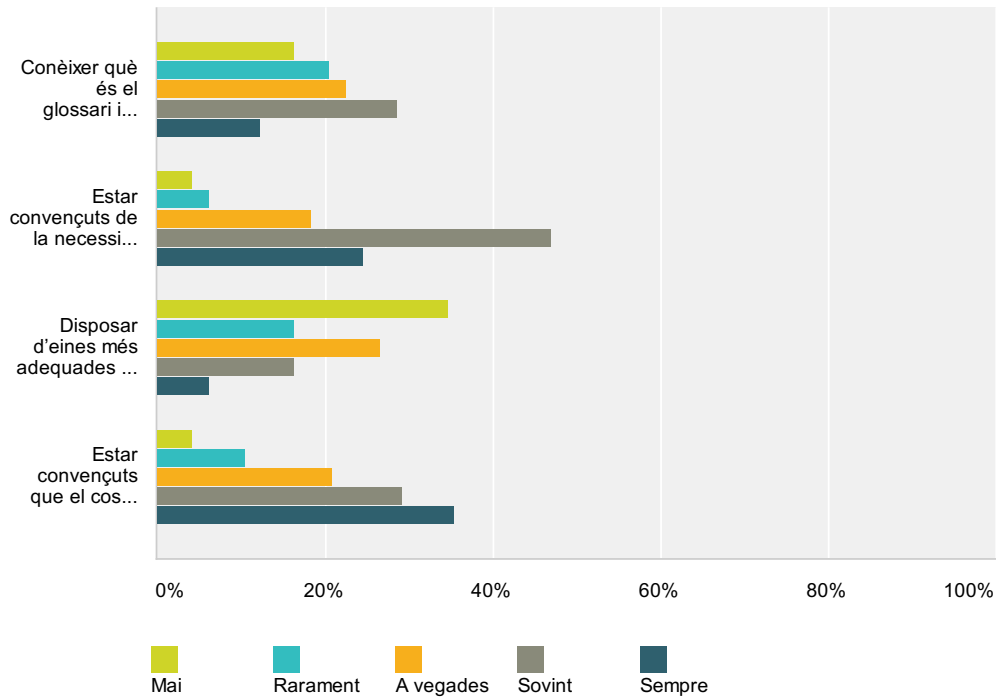
Respondido: 49 Omitido: 45



Opciones de respuesta	Respuestas
Mai	6,12% 3
Rarament	28,57% 14
A vegades	34,69% 17
Sovint	22,45% 11
Sempre	8,16% 4
Total	49

Q24 A continuació demanem què hauria calgut per tal que les parts interessades i els desenvolupadors haguessin considerat necessari i útil definir el glossari:

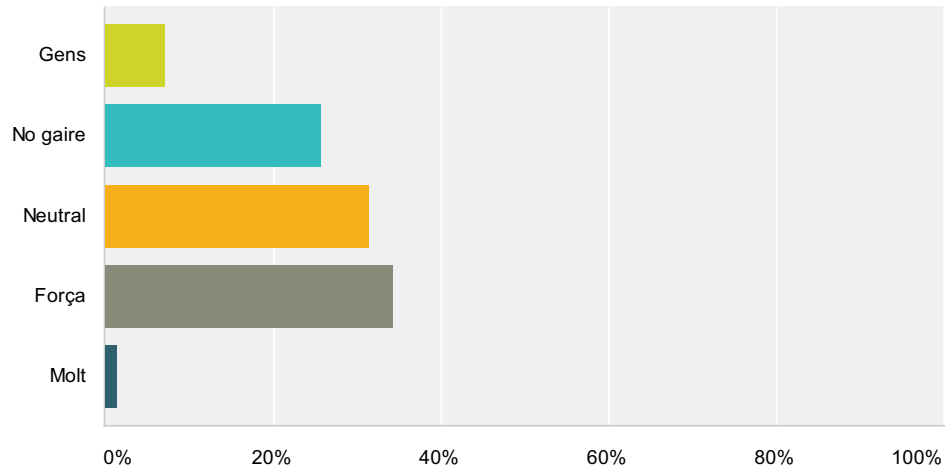
Respondido: 49 Omitido: 45



	Mai	Rarament	A vegades	Sovint	Sempre	Total
Conèixer què és el glossari i com definir-lo	16,33% 8	20,41% 10	22,45% 11	28,57% 14	12,24% 6	49
Estar convençuts de la necessitat de definir el glossari per al desenvolupament de sistemes	4,08% 2	6,12% 3	18,37% 9	46,94% 23	24,49% 12	49
Disposar d'eines més adequades per a definir el glossari	34,69% 17	16,33% 8	26,53% 13	16,33% 8	6,12% 3	49
Estar convençuts que el cost de definir els el glossari val la pena	4,17% 2	10,42% 5	20,83% 10	29,17% 14	35,42% 17	48

Q25 En general, creus que la formació rebuda a la FIB en definició de glossaris ha estat útil en la teva pràctica professional?

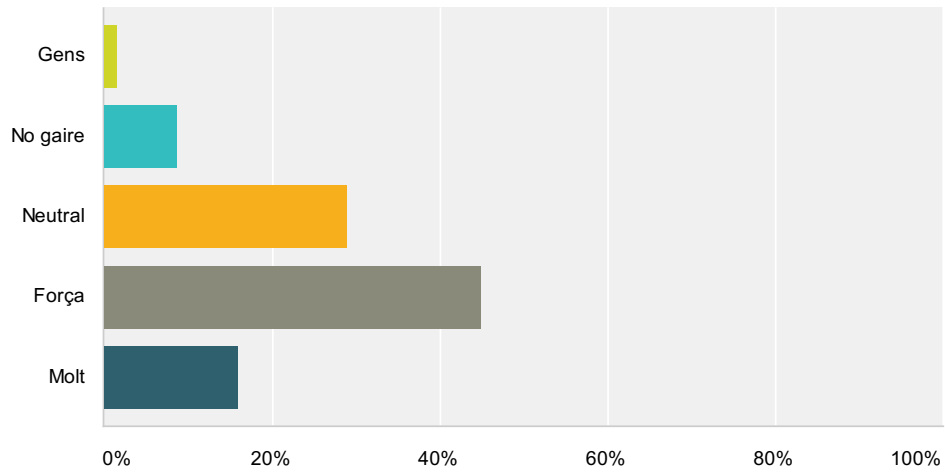
Respondido: 70 Omitido: 24



Opciones de respuesta	Respuestas
Gens	7,14% 5
No gaire	25,71% 18
Neutral	31,43% 22
Força	34,29% 24
Molt	1,43% 1
Total	70

Q26 En general, estàs d'acord que els estudiants d'enginyeria de requisits han de conèixer a fons la importància de la definició del glossari, i com fer-ho?

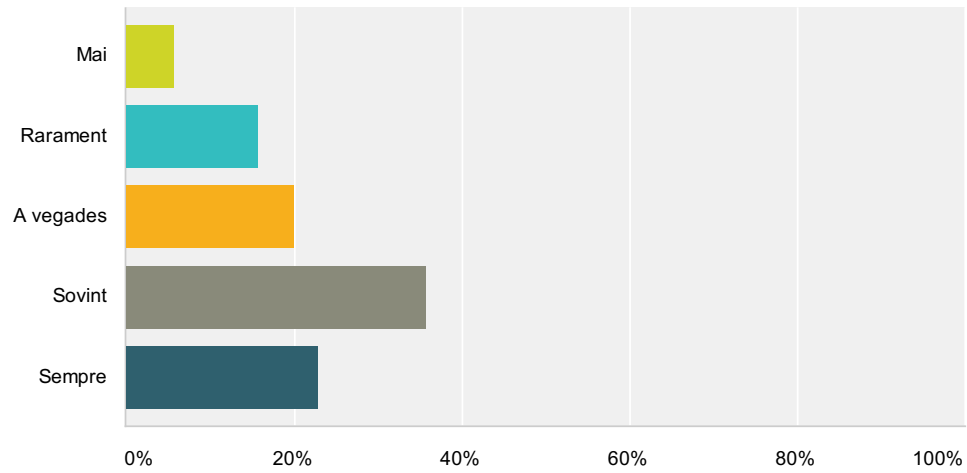
Respondido: 69 Omitido: 25



Opciones de respuesta	Respuestas
Gens	1,45% 1
No gaire	8,70% 6
Neutral	28,99% 20
Força	44,93% 31
Molt	15,94% 11
Total	69

Q27 En general, en els projectes en què has participat, l'esquema conceptual estructural del sistema es va definir (amb un nivell mínim de qualitat):

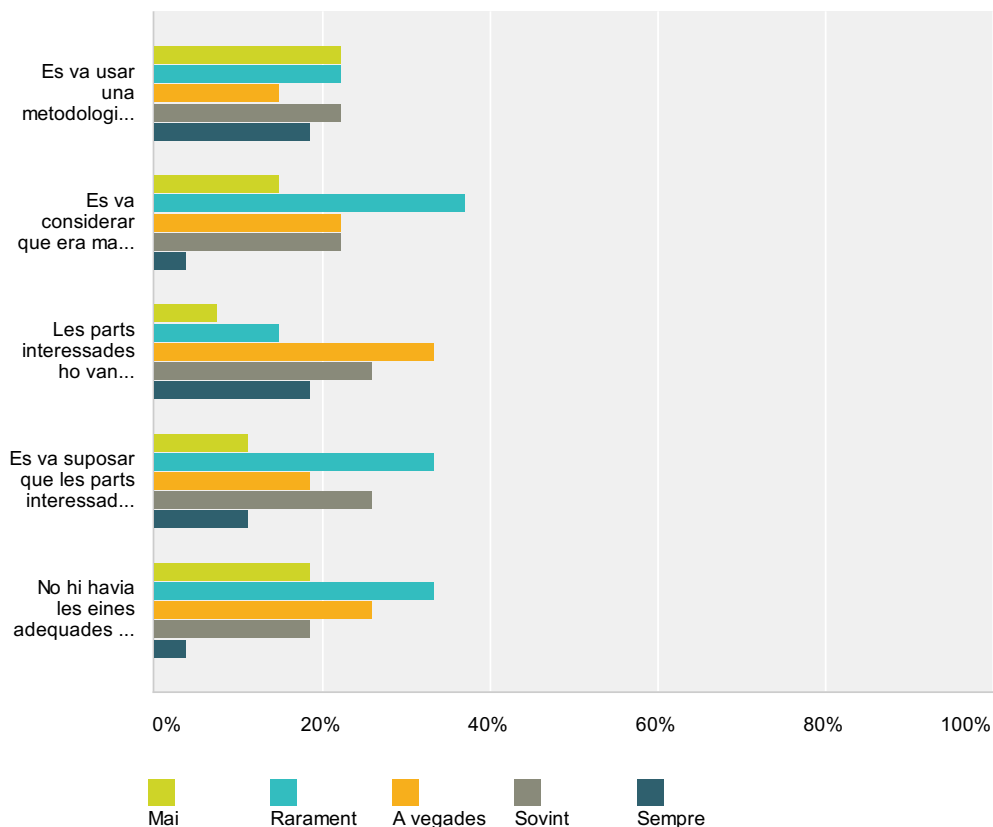
Respondido: 70 Omitido: 24



Opciones de respuesta	Respuestas
Mai	5,71% 4
Rarament	15,71% 11
A vegades	20% 14
Sovint	35,71% 25
Sempre	22,86% 16
Total	70

Q28 A continuació, demanem quines són les causes per les quals NO es va definir l'esquema conceptual estructural en els projectes en què has participat:

Respondido: 27 Omitido: 67



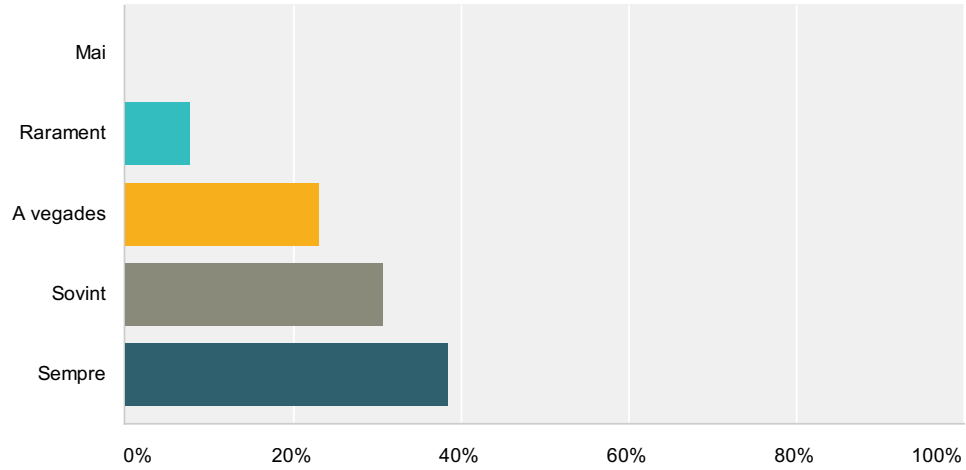
	Mai	Rarament	A vegades	Sovint	Sempre	Total
Es va usar una metodologia que no requeria la definició de l'esquema conceptual estructural	22,22% 6	22,22% 6	14,81% 4	22,22% 6	18,52% 5	27
Es va considerar que era massa difícil definir bé l'esquema conceptual estructural	14,81% 4	37,04% 10	22,22% 6	22,22% 6	3,70% 1	27
Les parts interessades ho van considerar innecessari o no ho van considerar econòmicament justificable	7,41% 2	14,81% 4	33,33% 9	25,93% 7	18,52% 5	27

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Es va suposar que les parts interessades ja coneixien implícitament l'esquema conceptual estructural	11,11% 3	33,33% 9	18,52% 5	25,93% 7	11,11% 3	27
No hi havia les eines adequades per definir l'esquema conceptual estructural	18,52% 5	33,33% 9	25,93% 7	18,52% 5	3,70% 1	27

Q29 En els projectes en els qual no es va definir l'esquema conceptual estructural, hauries recomanat de fer-ho, tenint en compte la situació i els recursos disponibles en aquell moment?

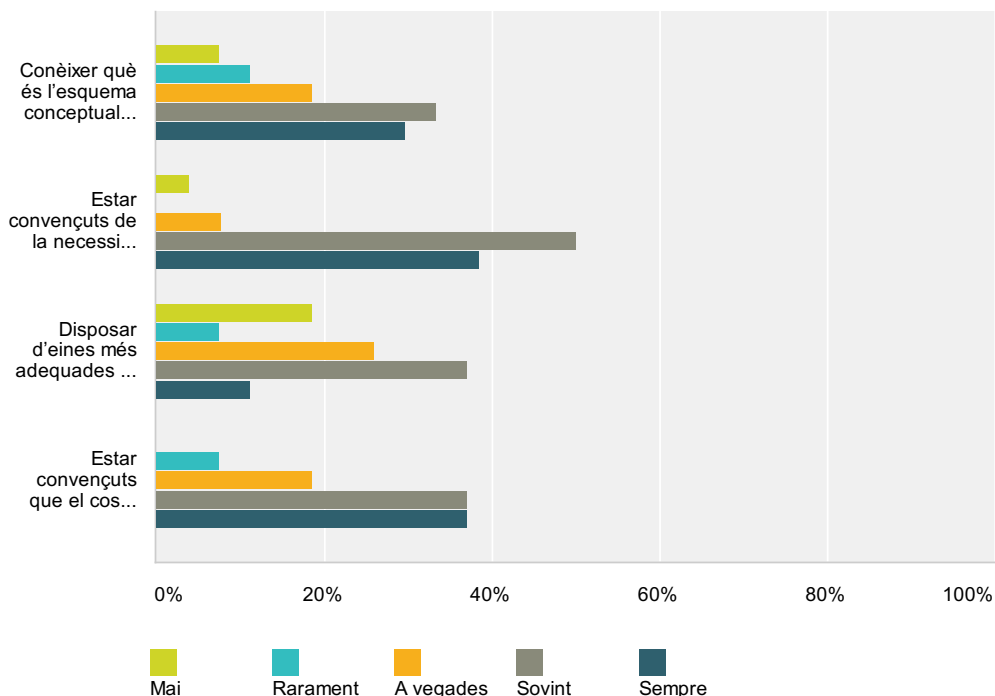
Respondido: 26 Omitido: 68



Opciones de respuesta	Respuestas
Mai	0% 0
Rarament	7,69% 2
A vegades	23,08% 6
Sovint	30,77% 8
Sempre	38,46% 10
Total	26

Q30 A continuació demanem què hauria calgut per tal que les parts interessades i els desenvolupadors haguessin considerat necessari i útil definir l'esquema conceptual estructural:

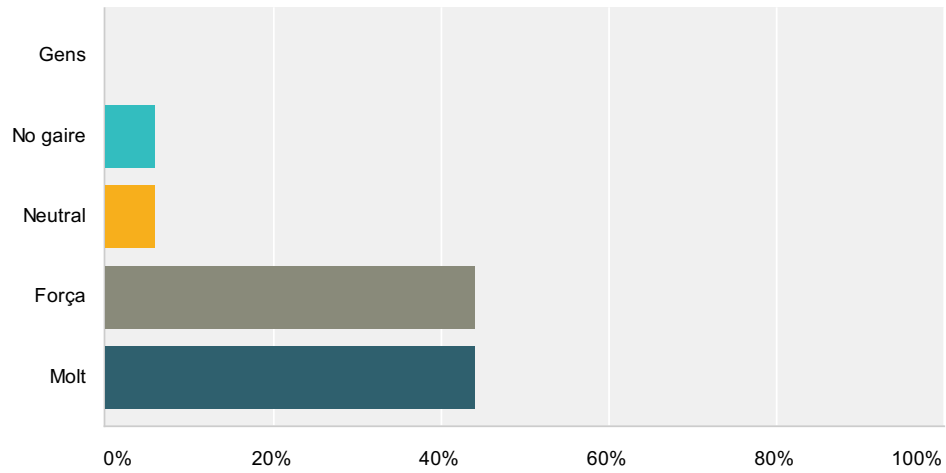
Respondido: 27 Omitido: 67



	Mai	Rarament	A vegades	Sovint	Sempre	Total
Conèixer què és l'esquema conceptual estructural i com definir-lo:	7,41% 2	11,11% 3	18,52% 5	33,33% 9	29,63% 8	27
Estar convençuts de la necessitat de definir l'esquema conceptual estructural per al desenvolupament de sistemes	3,85% 1	0% 0	7,69% 2	50% 13	38,46% 10	26
Disposar d'eines més adequades per a definir l'esquema conceptual estructural	18,52% 5	7,41% 2	25,93% 7	37,04% 10	11,11% 3	27
Estar convençuts que el cost de definir l'esquema conceptual estructural val la pena	0% 0	7,41% 2	18,52% 5	37,04% 10	37,04% 10	27

Q31 En general, creus que la formació rebuda a la FIB en la definició de l'esquema estructural ha estat útil en la teva pràctica professional?

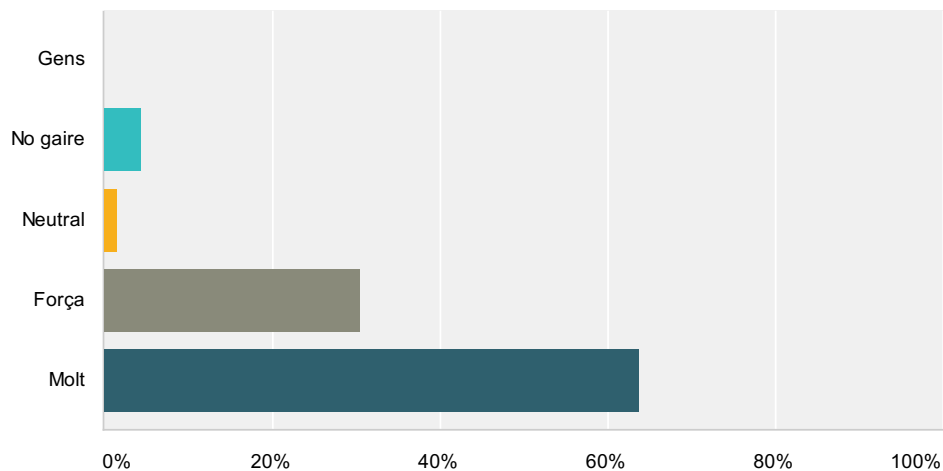
Respondido: 68 Omitido: 26



Opciones de respuesta	Respuestas	Cantidad
Gens	0%	0
No gaire	5,88%	4
Neutral	5,88%	4
Força	44,12%	30
Molt	44,12%	30
Total		68

Q32 En general, estàs d'acord que els estudiants d'enginyeria de requisits han de conèixer a fons la importància de la definició de l'esquema conceptual estructural, i com fer-ho?

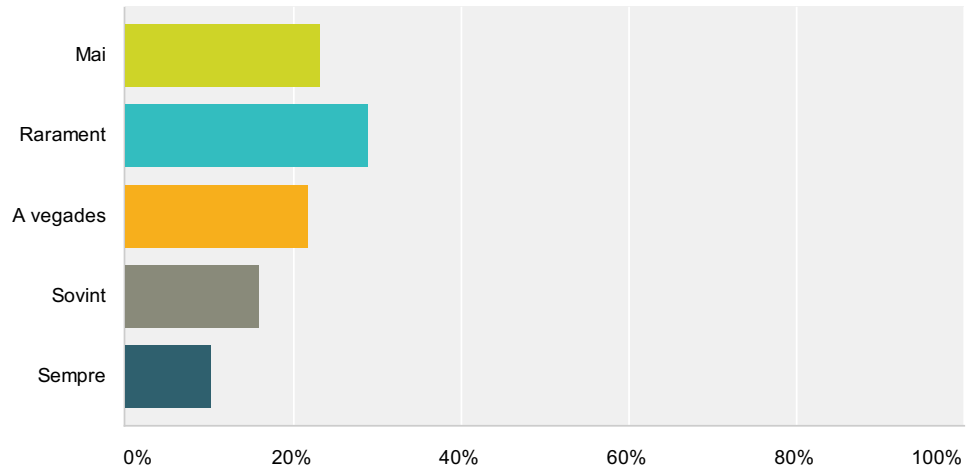
Respondido: 69 Omitido: 25



Opciones de respuesta	Respuestas
Gens	0% 0
No gaire	4,35% 3
Neutral	1,45% 1
Força	30,43% 21
Molt	63,77% 44
Total	69

Q33 En general, en els projectes en què has participat, les restriccions d'integritat del sistema a desenvolupar es van definir:

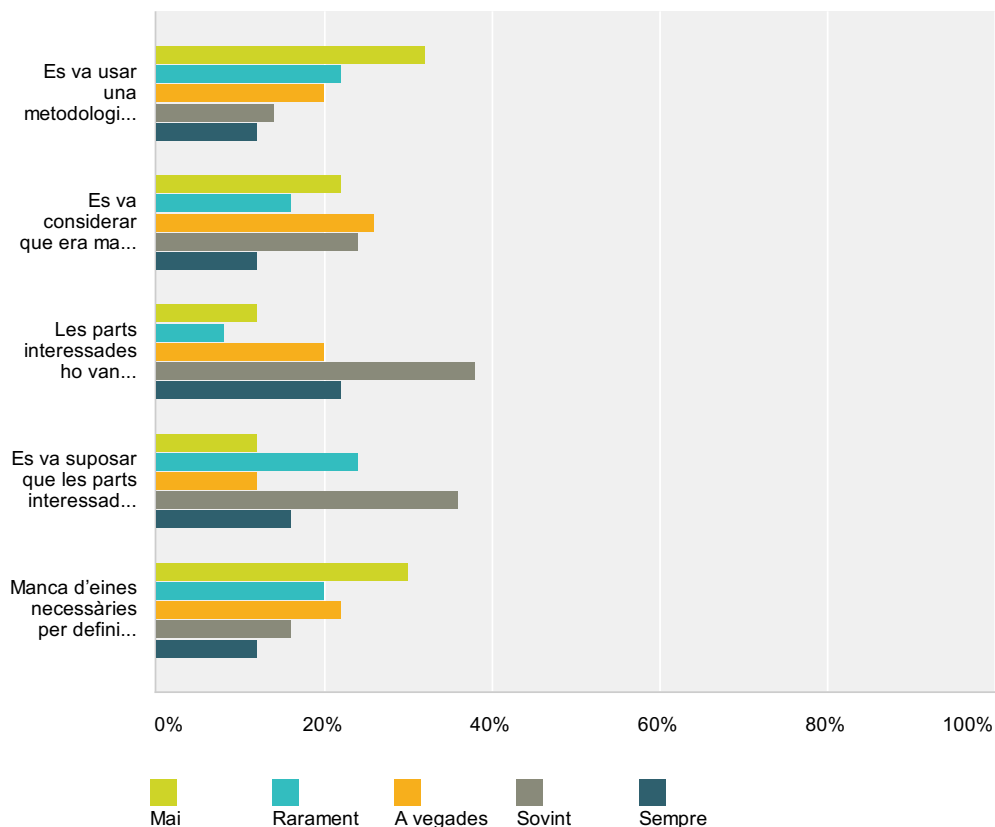
Respondido: 69 Omitido: 25



Opciones de respuesta	Respuestas
Mai	23,19% 16
Rarament	28,99% 20
A vegades	21,74% 15
Sovint	15,94% 11
Sempre	10,14% 7
Total	69

Q34 A continuació, demanem quines són les causes per les quals NO es van definir les restriccions d'integritat en els projectes en què has participat:

Respondido: 50 Omitido: 44



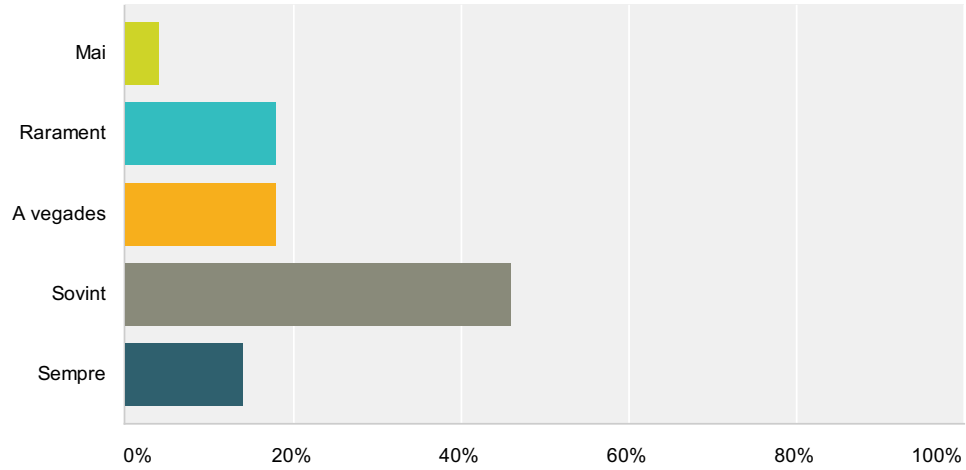
	Mai	Rarament	A vegades	Sovint	Sempre	Total
Es va usar una metodologia que no requeria la definició de les restriccions d'integritat	32% 16	22% 11	20% 10	14,00% 7	12% 6	50
Es va considerar que era massa difícil definir bé les restriccions d'integritat	22% 11	16% 8	26% 13	24% 12	12% 6	50
Les parts interessades ho van considerar innecessari o no ho van considerar econòmicament justificable	12% 6	8% 4	20% 10	38% 19	22% 11	50
Es va suposar que les parts interessades ja coneixien implícitament les restriccions d'integritat	12% 6	24% 12	12% 6	36% 18	16% 8	50

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Manca d'eines necessàries per definir les restriccions d'integritat	30% 15	20% 10	22% 11	16% 8	12% 6	50

Q35 En els projectes en els qual no es van definir les restriccions d'integritat, hauries recomanat de fer-ho, tenint en compte la situació i els recursos disponibles en aquell moment?

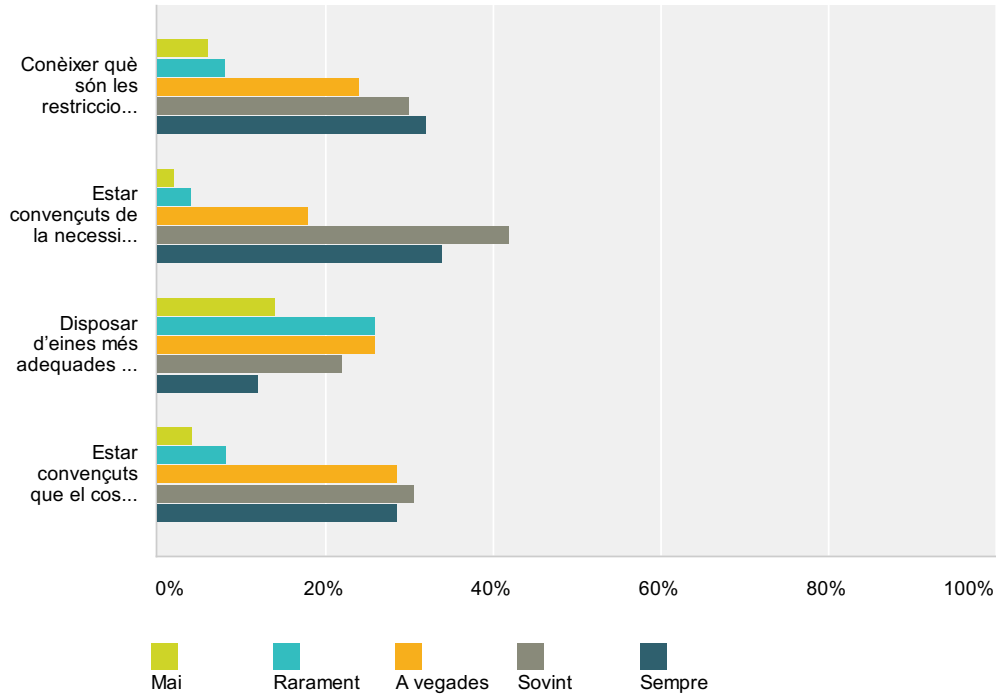
Respondido: 50 Omitido: 44



Opciones de respuesta	Respuestas
Mai	4% 2
Rarament	18% 9
A vegades	18% 9
Sovint	46% 23
Sempre	14,00% 7
Total	50

Q36 A continuació demanem què hauria calgut per tal que les parts interessades i els desenvolupadors haguessin considerat necessari i útil definir les restriccions d'integritat:

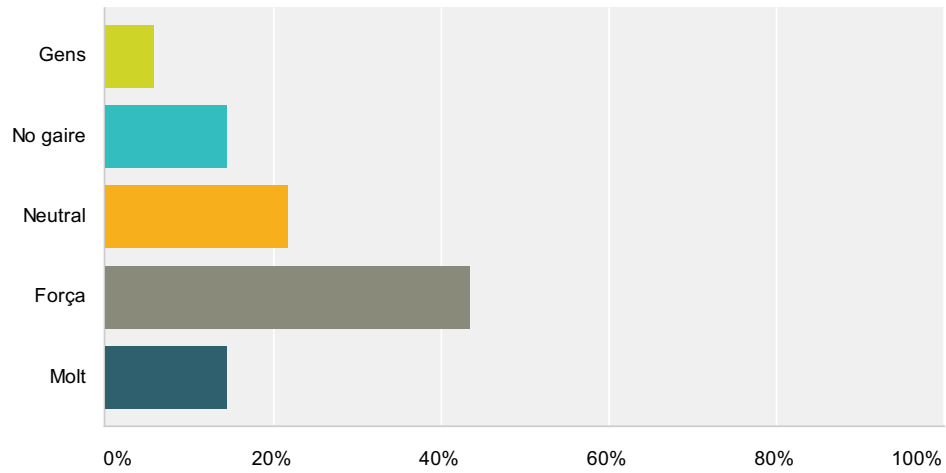
Respondido: 50 Omitido: 44



	Mai	Rarament	A vegades	Sovint	Sempre	Total
Conèixer què són les restriccions d'integritat i com definir-les	6% 3	8% 4	24% 12	30% 15	32% 16	50
Estar convençuts de la necessitat de definir les restriccions d'integritat per al desenvolupament de sistemes	2% 1	4% 2	18% 9	42% 21	34% 17	50
Disposar d'eines més adequades per a definir les restriccions d'integritat	14,00% 7	26% 13	26% 13	22% 11	12% 6	50
Estar convençuts que el cost de definir les restriccions d'integritat val la pena	4,08% 2	8,16% 4	28,57% 14	30,61% 15	28,57% 14	49

Q37 En general, creus que la formació rebuda a la FIB en la definició de restriccions d'integritat ha estat útil en la teva pràctica professional?

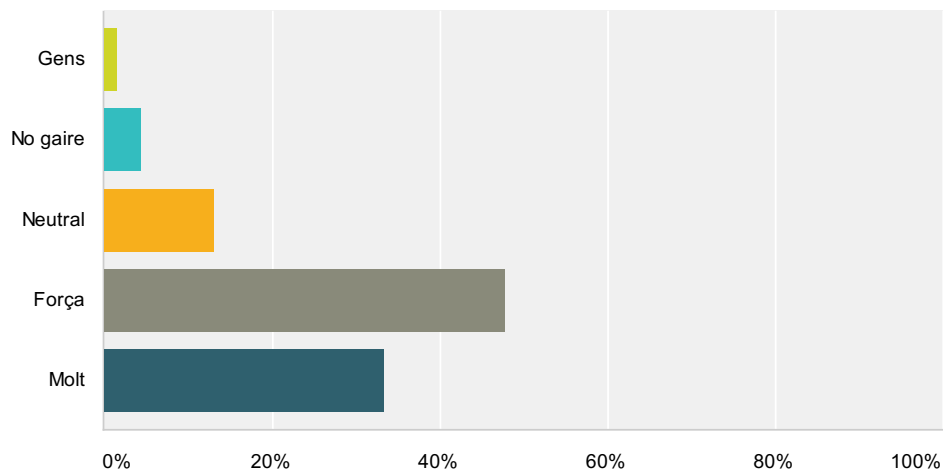
Respondido: 69 Omitido: 25



Opciones de respuesta	Respuestas	
Gens	5,80%	4
No gaire	14,49%	10
Neutral	21,74%	15
Força	43,48%	30
Molt	14,49%	10
Total		69

Q38 En general, estàs d'acord que els estudiants d'enginyeria de requisits han de conèixer a fons la importància de la definició de les restriccions d'integritat, i com fer-ho?

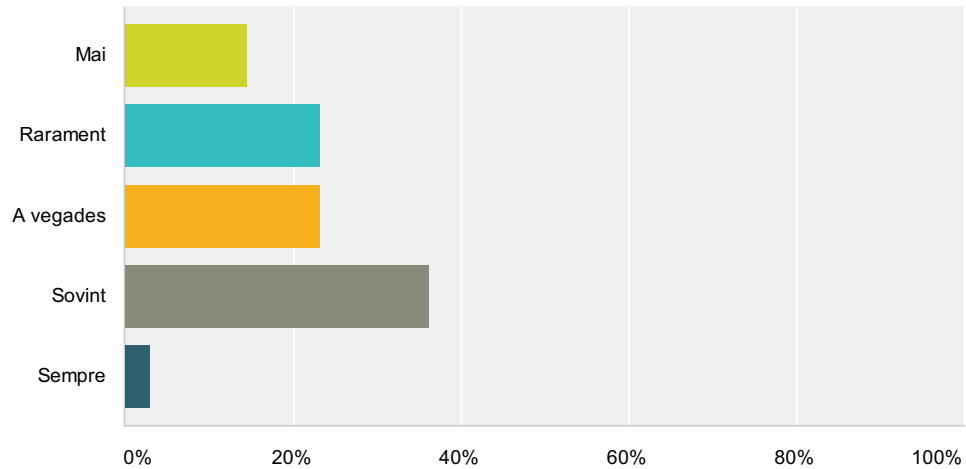
Respondido: 69 Omitido: 25



Opciones de respuesta	Respuestas
Gens	1,45% 1
No gaire	4,35% 3
Neutral	13,04% 9
Força	47,83% 33
Molt	33,33% 23
Total	69

Q39 En general, en els projectes en què has participat, l'esquema conceptual del comportament del sistema a desenvolupar es va definir amb un nivell mínim de qualitat:

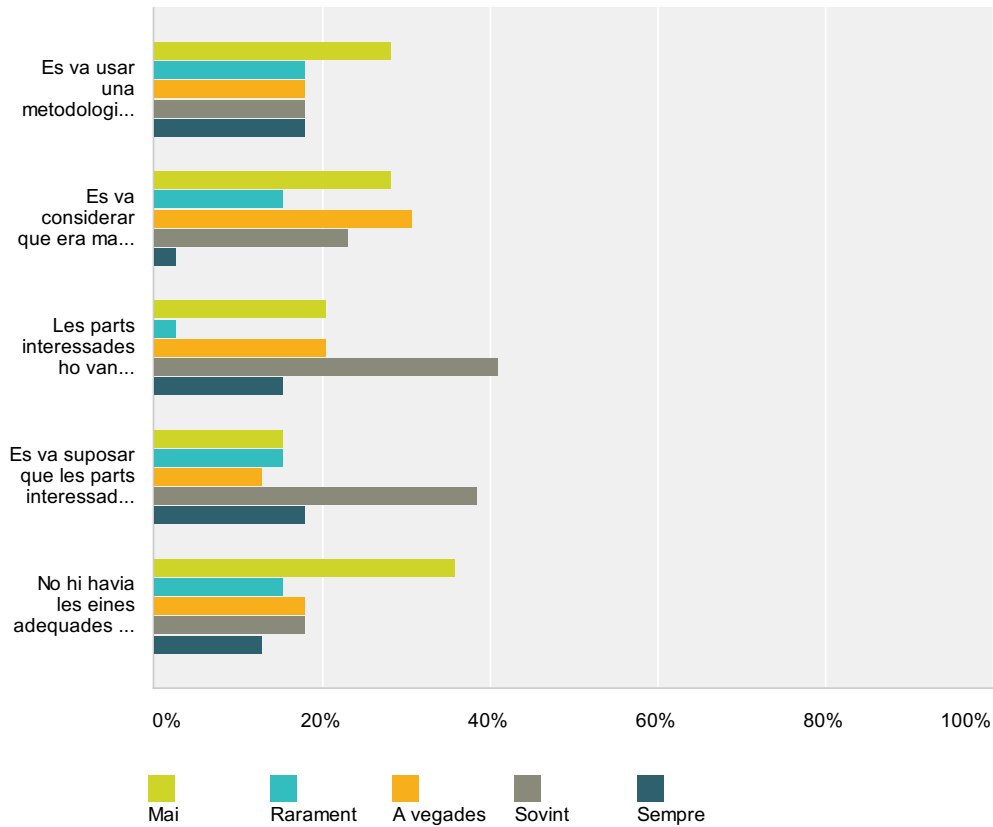
Respondido: 69 Omitido: 25



Opciones de respuesta	Respuestas
Mai	14,49% 10
Rarament	23,19% 16
A vegades	23,19% 16
Sovint	36,23% 25
Sempre	2,90% 2
Total	69

Q40 A continuació, demanem quines són les causes per les quals NO es va definir l'esquema conceptual del comportament en els projectes en què has participat:

Respondido: 39 Omitido: 55



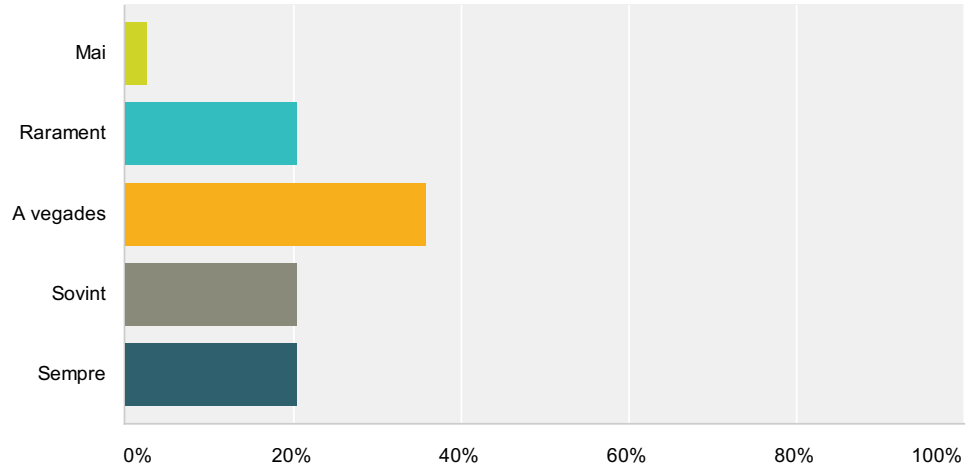
	Mai	Rarament	A vegades	Sovint	Sempre	Total
Es va usar una metodologia que no requeria la definició de l'esquema conceptual del comportament	28,21% 11	17,95% 7	17,95% 7	17,95% 7	17,95% 7	39
Es va considerar que era massa difícil definir bé l'esquema conceptual del comportament	28,21% 11	15,38% 6	30,77% 12	23,08% 9	2,56% 1	39
Les parts interessades ho van considerar innecessari o no ho van considerar econòmicament justificable	20,51% 8	2,56% 1	20,51% 8	41,03% 16	15,38% 6	39

Investigació sobre la formació i l'ús a la pràctica de l'Enginyeria de Requisits

Es va suposar que les parts interessades ja coneixien implícitament l'esquema conceptual del comportament	15,38% 6	15,38% 6	12,82% 5	38,46% 15	17,95% 7	39
No hi havia les eines adequades per definir l'esquema conceptual del comportament	35,90% 14	15,38% 6	17,95% 7	17,95% 7	12,82% 5	39

Q41 En els projectes en els qual no es va definir l'esquema conceptual del comportament, hauries recomanat de fer-ho, tenint en compte la situació i els recursos disponibles en aquell moment?

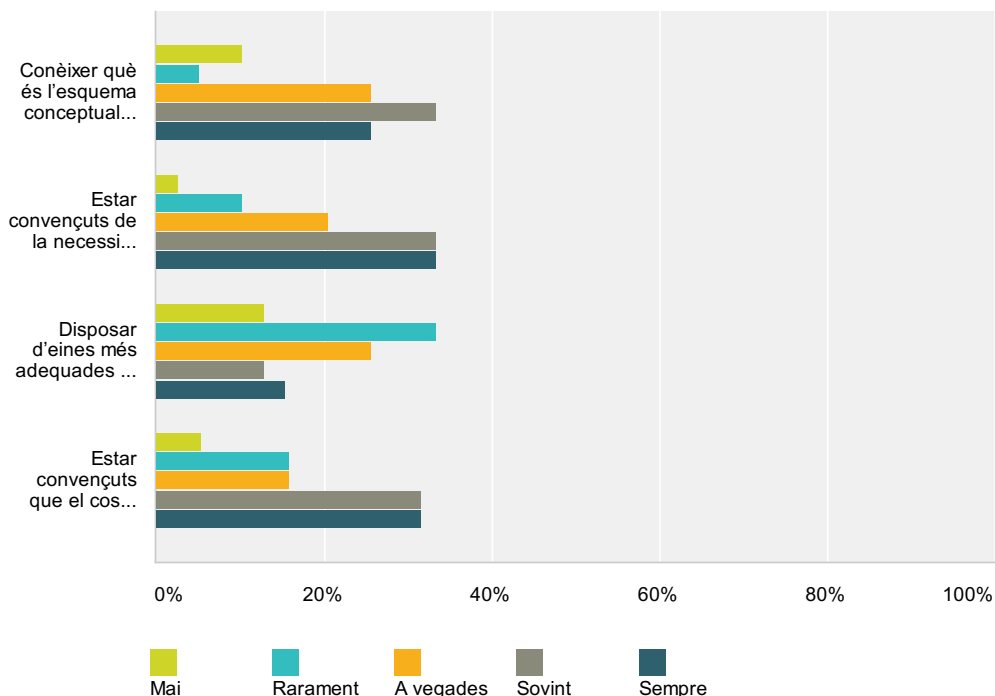
Respondido: 39 Omitido: 55



Opciones de respuesta	Respuestas
Mai	2,56% 1
Rarament	20,51% 8
A vegades	35,90% 14
Sovint	20,51% 8
Sempre	20,51% 8
Total	39

Q42 A continuació demanem què hauria calgut per tal que les parts interessades i els desenvolupadors haguessin considerat necessari i útil definir l'esquema conceptual del comportament:

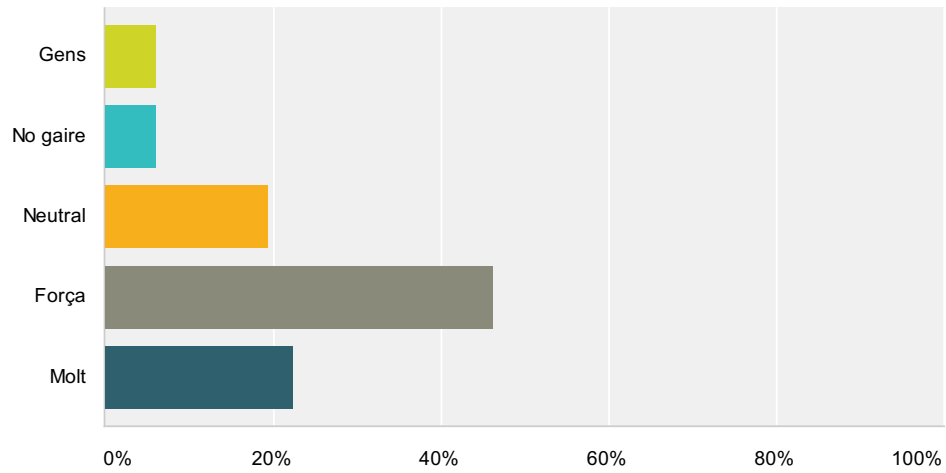
Respondido: 39 Omitido: 55



	Mai	Rarament	A vegades	Sovint	Sempre	Total
Conèixer què és l'esquema conceptual del comportament com definir-lo	10,26% 4	5,13% 2	25,64% 10	33,33% 13	25,64% 10	39
Estar convençuts de la necessitat de definir l'esquema conceptual del comportament per al desenvolupament de sistemes	2,56% 1	10,26% 4	20,51% 8	33,33% 13	33,33% 13	39
Disposar d'eines més adequades per a definir l'esquema conceptual del comportament	12,82% 5	33,33% 13	25,64% 10	12,82% 5	15,38% 6	39
Estar convençuts que el cost de definir l'esquema de comportament val la pena	5,26% 2	15,79% 6	15,79% 6	31,58% 12	31,58% 12	38

Q43 En general, creus que la formació rebuda a la FIB en la definició de l'esquema de comportament ha estat útil en la teva pràctica professional?

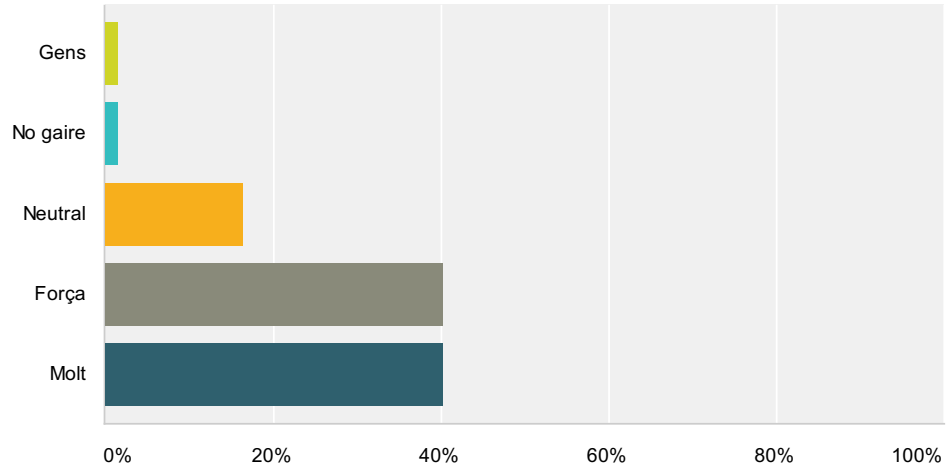
Respondido: 67 Omitido: 27



Opciones de respuesta	Respuestas	
Gens	5,97%	4
No gaire	5,97%	4
Neutral	19,40%	13
Força	46,27%	31
Molt	22,39%	15
Total		67

Q44 En general, creus que els estudiants d'enginyeria de requisits han de conèixer a fons la importància de la definició de l'esquema conceptual del comportament, i com fer-ho?

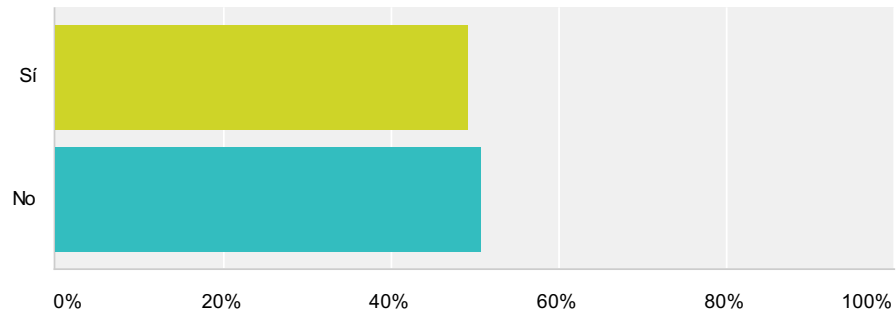
Respondido: 67 Omitido: 27



Opciones de respuesta	Respuestas
Gens	1,49% 1
No gaire	1,49% 1
Neutral	16,42% 11
Força	40,30% 27
Molt	40,30% 27
Total	67

Q47 Estaries disposat a participar en una trobada d'un màxim de dues hores per discutir en grup les respostes a aquest qüestionari?

Respondido: 63 Omitido: 31



Opciones de respuesta	Respuestas	
Sí	49,21%	31
No	50,79%	32
Total		63