

SUMMARY

A company that specializes in welding, stamping and painting produces 24 hours a day with three different shifts (morning, afternoon and evening). It does manually the same procedure to get the ideal distribution of its painting sections three times per day.

Due to the complexity and hours involved in this process daily, this final degree project is based on the automation of production planning allowing you to find an optimal distribution without the need to be calculating as it is done nowadays. To carry out this project, the maximum number of resources and strategies currently applied will take part in the project as the distributions are efficient. Therefore, this project consists of making everyone able to have a production plan without the need to require years of experience as it happens today and be able to get results in a faster and more optimal way.

To achieve this, the project consists of several major parts. Initially, there is a general explanation of how the company works. This part also explains how the painting system works and how it transports the components throughout the painting cycle. The following explanation is an overview of today's production using production data for a particular day.

Secondly, the concepts that will be included in the program are theoretically explained. It initially shows the extraction of the program data and then shows how the necessary calculations can be obtained.

The following section consists of the practical part. This section outlines all the processes that are done by a computer to reach the desired results. The project consists of a main menu made with Visual Studio based on some processes made with SQL.

Straightaway, we come to the part of the results where there is an order of priority of the pieces of a particular day, the distribution with the seasons, the number of pieces to be painted and the time required.

Finally, there are some possible improvements and conclusions based on the results extracted.