

ABSTRACT

The purpose of this thesis, is the design and manufacture of a relatively cheap, three-dimensional printer to facilitate the production of jewels in the jewellery industry. The objective is to reduce the production cost.

Firstly, in this thesis, the 3D Printer History, since its creation to the newest printers of the last generation is presented. Through this chronology, there is a presentation of the development of printers, from their very first stage to the final stage of production. Subsequently, there is a brief overview about the parts which we used to create the printer. Next, there is reference about the parts we made, the reasons we made them and their purpose. In addition, there is an overview of the machinery required to be bought.

In the following chapter , there are details about the way the printer is manufactured, as well as a detailed description and design of the workshop, where we could manufacture 125 printers per month, at a relatively low cost.

In the next chapter of the thesis, is the calculation of the cost of each item purchased and a calculation of the total cost of the three-dimensional printer.

The next chapter, refers to the programming code which is responsible for the overall control of a three-dimensional printer. Apart from these, the software which was used for its operation and the reason for choosing this particular software is explained. Finally, there is a discussion about the results and the final conclusions are presented.

I would like to mention, that the experience I gained while trying to create the three-dimensional printer, was very important and I strongly believe, that it will help me in my future professional career.

