Requirements Document

for

Boxeur - Case Designer

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1 INTRODUCTION

1.1 Purpose

Many students at OSU seek to take advantage of the equipment that is provided at OSU's makerspaces, such as 3D printers and laser cutters, but don't have the required background knowledge in 3D modeling. Our web based application will provide an easy way for students to generate 3D models of enclosures for their projects that are ready for fabrication with no prior knowledge of 3D CAD software.

1.2 Scope

The purpose of this document is to outline the requirements for the case designer from a technical viewpoint.

1.3 Definitions and Abbreviations

CS	Computer Science
ECE	Electrical and Computer Engineering
OSU	Oregon State University
CAD	Computer-Aided Design
Makerspace	A place in which people with interests in computing or technology can gather to work on projects while sharing ideas, equipment, and knowledge.

2 OVERALL DESCRIPTION

2.1 Product Perspective

The main goal of this project is to create a web based application that lets students define exact measurements for a case which can be exported to be fabricated. This lets students create exactly what they need with no background knowledge of the intricacies of 3D printers and laser cutters and with no experience in 3D auto computer-aided design.

2.2 Product Functions

2.2.1 Production function:

1. Provide a variety of enclosures templates
2. Users can modify the size of the enclosures and other related data.
3. Calculate whether the relevant data is accurate enough

4. Read data and provide solutions based on user input

5. After the production is completed, the output production model

2.2.2 Graphic function:

1. Provide available graphics and record based on user input

2. Graphics can be dragged, zoomed in or out correctly.

3. Record the final model and optimize the solutions.

2.2.3 Website function:

1. User's input and production model will be stored for next use

2. The model is allowed to be downloaded, and the user can also upload the model to complete the design.

3. Provide instructions for use and prompt users how to better complete the design

2.3 User Characteristics

The intended users of this product will be the ECE and CS students involved in the design of enclosures. Considering that many students do not have experience in 3D printing and laser cutting, this application simplifies the design method to the maximum to meet the needs of more students, so the application is equally applicable to students without any design experience. In addition, the application helps anyone who wants to design enclosures, even though its target user is students, which is easy to use.

2.4 Constraints

2.4.1 Program languages:

All programming languages should implement the functionality of a website application based on Html, CSS, and JavaScript. Some functions need help with databases or other programming languages such as JAVA.

2.4.2 Information safety:

The application will ensure the user's personal information security, it does not make the user's information leak, and ensures the user's data security and avoid loss or damage.

2.4.3 Data Storage:

When the user's network or browser encounters an unexpected situation, the application will ensure that their data and design will not be lost. For example, when the user's network is interrupted, the application automatically saves the user's work in advance for the next use.

2.4.4 Device Constraint:

The application can adapt to a variety of browsers as well as screen sizes and output files correctly. It should be allowed to run successfully on a variety of computers.

2.5 Assumptions and Dependencies

- We assume the users will speak English
- We assume the users will have experience in using websites

3 Gantt Chart