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E322 ASSIGNMENT 2

Project: Multi-Purpose Study Lamp

I PLEDGE MY HONOR THAT I HAVE ABIDED BY THE STEVENS HONOR SYSTEM

Overview

My potential project would be a multi-purpose study lamp. It is basically a combination of a study lamp, stereo speakers and an alarm clock. As usual, the neck of the lamp will be flexible so that it will be easier to use. The neck of the study lamp would be detachable so that it will be easier to store the product. An energy saving light bulb will be used as it is more efficient and brighter too. However, other type of light bulbs up to 100W can also be used. The alarm clock and speakers will be placed at the base of the lamp. The base would be rectangular in shape. An alarm clock with LED display would be placed at the front side of the rectangular base. Speakers would be located on left and right side of the base in order to produce a stereo sound quality. At the back of the base, there would be an AC connector to the power source.

On top of the base, there would be a docking station. This docking station is compatible with Apple devices such as the iPod and the iPhone. A 3.5 mm audio jack would also be placed next to the docking station. This is useful for other non-Apple devices as the user can connect their device to the speakers by using an auxiliary cable. The audio jack also allows the users to listen to the music by wearing an ear buds or a headphone. In order to make the alarm clock more effective, the speakers' function is going to be integrated with the alarm clock itself. By this way, the sound produced by the alarm clock will be louder, making it more effective.

In my opinion, this product has a huge potential in the market. The main potential consumer for this product is students. I assume that a study lamp, an alarm clock and audio speakers can be classified as important items needed by a student. However, having all these 3 products together on their working space can be quite bothersome because these items can take quite a lot of space. By unifying all three items into a single product, students can save more space and have a more comfortable environment for studying. In addition, I strongly believe that students will find this product useful when they use it while studying as it helps in giving a good lighting, playing their favorite music and keeping them aware of the time.

For marketing, this product would be available at all major supermarkets. School bookstores are also a good place to introduce this product. The price should be affordable for consumers (ranging from \$50 to \$80). Lastly, the product must be easy to operate, user friendly and does not harm the environment.

List of Stockholders and Their Potentials

1. Manufacturer/Designer
 - The design should not be too complicated so that the time taken for production can be reduced
 - The product should be possible to manufacture with existing technology
 - The materials of the product do not cause any harm to people or environment

2. Investors
 - The project must be well-planned and effectively managed
 - The project does not require a large amount of resources and cost
 - The project should be profitable enough in order for them to invest in it

3. Users/Consumer
 - The product should be easy to operate
 - The product does not harm the users or environment
 - The product should consist of interchangeable parts so that it would be easier for the user to repair it

Project Evaluation

This project does not take too much time because it is not too complicated. It only requires the simple and basic skills in electrical and mechanical engineering, which most engineering students should have mastered regardless of their specific engineering major. The estimated time to complete this project is less than 3 months.

Since most of the parts and materials needed to build this product are quite cheap and easy to find, the cost for this project will not be a problem. The estimated cost would be less than \$150 per product.

Skills Requirements

This project requires students majoring in electrical and mechanical engineering as it is mostly about designing the product and dealing with electrical and electronic circuits. Students should be able to work as a team, meet deadlines, and work on extra hours. Other than that, students with great communication skills are also welcomed to join this project as they are important to help the group in dealing with potential investors and many more.

SWOT Analysis

Strengths

The multi-purpose study lamp consists of three of the most important items in students' life, which is the alarm clock, a study lamp and a stereo speaker. This product somehow helps consumer to get all those three items by just buying one product. By having this product, the consumer will be able to save more space on their working space. The stereo speaker is also a killer feature because nowadays almost everyone loves listening to music. These speakers will help in providing them with a better music experience. The alarm clock which is integrated with the stereo speakers will also make this product become more reliable compared to other typical alarm clocks in the market.

Weaknesses

- The product does not seem too revolutionary as there are also other products that are quite similar to it, with the exception of the study lamp integration
- The project is also quite simple and may not worth to be a project for the Senior Design fair.

Opportunities

- This product will have more potential if it comes with some cool features like touchscreen input (to control the speakers' volume and adjust the clock) and a built-in radio
- This product can also attract more customers if it has very nice designs
- Nowadays, consumers usually prefer to buy energy saving electrical appliances. So it would be better if this product only require less amount of energy to operate

Threats

- It is preferable for this product to have a good sound quality. This can be achieved by equipping it with high quality speakers. However, those speakers are quite expensive and this will lead to an increase in the price of the product. If the price is high, the product might not sell very well