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|  | | COMP\_8117\_lab\_1 Training Part | | | | |  | |
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|  | | | | Anubha Sharma |  | | | |
|  | | | | 22-5-2021—Advanced Software Eng. Concepts—Dr. Aznam Yacoub |  | | | |
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**Question**

1. As a training, we ask you to go outside and pick any object you find in your environment. Try to describe it as accurate as possible. For each object :

- Describe a need (Why this object is useful) – Use case scenario may help you to understand the need(s)

- Describe the different aspects of the object which helps to fulfill the needs (What functionnalities/qualities of the object are useful for the need)

- Describe the internal work and the constraints

- Repeat it for each component of this object

- When do you decide to stop your description? Why?

2. Repeat the question 1 with a piece of software of your choice.

3. Send your specifications to your mentor to get feedbacks.

**Answer**

**OBJECT**: Earphones

**Need**: Earphones are needed to prevent people in the immediate surroundings, from listening to the

content on smartphones, laptops or any other device that has a speaker incorporated into it. It is not only used for the privacy purposes but is also used to help the user in listening to the content without disturbing anyone.

**Different Aspects:**

* A standard connector to connect the device:

The device needs a common port that can connect to any device. A common connector would help as the user won’t have to buy different earphones for different devices.

* Cord wire:

An earphone must have a cord wire for easier mobility of the user. Also, in case the user is viewing a video or having a video chat, a cord wire will facilitate in viewing and listening the content simultaneously while maintaining the privacy of user. This would also help in not disrupting anyone else around.

* Mic:

A mic is helpful when having a conversation with someone on a device.

* Earbuds:

For the ease of inserting the earphones in one’s ears.

**Internal Working and Constraints:**

**Internal Working:[1]**

Earphones are fundamentally tiny speakers. They have inbuilt electromagnets. These electromagnets vibrate the air and convert electrical energy into sounds.

An audio is basically 1’s and 0’s. when the audio is played, these 1’s and 0’s corresponding to that audio file are converted into an electrical signal via digital to analog convertor. These signals are received by the driver unit via headphones wires.

The driver unit consists of 2 magnets placed in each earcup. These magnets vibrate depending on the frequency of electrical signal received. A diaphragm is attached to each electromagnet which vibrates along with electromagnets which in turn causes the air surrounding it to vibrate in the similar pattern. This is what we hear as sound.

**Constraints:**

1. The in-ear earphones use this technology on a very small scale, which results in loss of some frequencies.
2. The longer the cord, the more it intends to get tangled.

**When Did I Stop My Description?**

I decided to stop my description when I though that the major components of the object has been covered. Although I have not defined the non-functional requirements (the look and feel, the color of the object, material used etc.), I still feel that the developers reading the document can full grasp the different aspects of the object that needs to be created and how it needs to work. The non-function requirements, in my opinion should be the part of design document.

**SOFTWARE:** fernsnpetals

**Need:** fernsnpetals helps in booking and gifting cakes, flowers and some personalized items like cards, photo mugs etc., for various occasions and in various cities in the India. If a user is stationed out of their home city and wants to surprise their loved ones, they will be able to use this platform to do so. The option of customizing the item and selecting delivery date and time will be provided.

**Different Aspects:**

* **A Profile Page:**

The user can see all the previously ordered item, save address. This will help the user save time

while doing future searches.

* **Search Item:**

The user can search the item they need from the search bar and a list of items available will be listed.

* **Customize Item:**

Once the item is selected, user can use the customize option, if available (depends on the item being ordered) and place the order.

* **Place Order:**

For placing the order, the user has to select a delivery location and date and time when the order has to be delivered. The system will access if the delivery can be made. Based on that the order proceeds to payment page or the error notification pos up.

* **Track Order Functionality:**

When the order is placed, the user will be able to track the order status whether the order has been accepted by the restaurant and if the progress is on-time.

* **Reviews:**

The user can add reviews and photos of the item received.

* **Search Based on Category:**

Shop by category will display a list of categories like {Birthday, flowers, cakes, Anniversary, Same Day, Personalized Gifts, plants etc.}. this will make the search easier for the user.

* **Payments:**

Only prepaid orders will be accepted. Payment can be made from Credit/Debit cards, Paytm, G-Pay.

**Internal Working and Constraints:**

**Internal working:**

**NOTE:** I could not find it anywhere, this is how I think this system should work.

When the user places an order, a notification call and message should go to the manager (or the person responsible) of the delivering the orders in the target city. The support team should confirm that the order is in-fact serviceable. The manager or restaurant staff can go to the website with admin login, see the details of the order received and start working on the order. The order status will be updated as the order progress, for user to be able to track order.

**Constraints/Open-Ended Questions:**

1. What if the item initially displayed to user isn’t available anymore?
2. What if the manager doesn’t respond?
3. How to compensate the user for late or early delivery?

**REFERENCES:**

**[1] C. DE LOOPER, HOW DO HEADPHONES WORK? A GUIDE TO THE INNER WORKINGS OF OUR HEADPHONES, SEPT. 30, 2016. ACCESSED ON May 22,2021.** [**https://libraryguides.vu.edu.au/ieeereferencing/webbaseddocument**](https://libraryguides.vu.edu.au/ieeereferencing/webbaseddocument)