**St. Francis Institute of Technology**

**Department of Computer Engineering**

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**Subject: Human Machine Interaction Class / Branch / Division: BE/CMPN/A**

Name :-Rebecca Dias Roll Number:18

**Experiment No: 06**

**Aim:-** Redesign interfaces of home appliances.

**I-OBJECTIVE**

* To understand the trouble of interacting with machines.
* Redesign interfaces of home appliances like microwave oven, land-line phone.
* To show the bad design of the home appliances as well as the good design of the home appliances.

**II-THEORY**

**Home Appliance:** A home appliance, also referred to as a domestic appliance, an electric appliance or a household appliance is a machine which assists in [household](https://en.wikipedia.org/wiki/Household) functions such as [cooking](https://en.wikipedia.org/wiki/Cooking), [cleaning](https://en.wikipedia.org/wiki/Cleanliness) and [food preservation](https://en.wikipedia.org/wiki/Food_preservation).

Appliances are divided into three types:

* [Small appliances](https://en.wikipedia.org/wiki/Small_appliance)
* [Major appliances](https://en.wikipedia.org/wiki/Major_appliance)
* C[onsumer electronics](https://en.wikipedia.org/wiki/Consumer_electronics)

[**Small appliances**](https://en.wikipedia.org/wiki/Small_appliance) **-** A small domestic appliance, also known as a small electric appliance or minor appliance or simply a small appliance, small domestic or small electric, is a portable or semi-portable machine, generally used on [table](https://en.wikipedia.org/wiki/Table_(furniture))-tops, [counter-tops](https://en.wikipedia.org/wiki/Countertop) or other platforms, to accomplish a [household](https://en.wikipedia.org/wiki/Household) task.

Examples include [microwave ovens](https://en.wikipedia.org/wiki/Microwave_oven), [toasters](https://en.wikipedia.org/wiki/Toaster), [humidifiers](https://en.wikipedia.org/wiki/Humidifier), [food processors](https://en.wikipedia.org/wiki/Food_processor) and [coffeemakers](https://en.wikipedia.org/wiki/Coffeemaker).

[**Major appliances**](https://en.wikipedia.org/wiki/Major_appliance) **-** A major appliance, also known as a large domestic appliance or large electric appliance or simply a large appliance, large domestic, or large electric, is a non-portable or semi-portable [machine](https://en.wikipedia.org/wiki/Machine) used for routine housekeeping tasks such as [cooking](https://en.wikipedia.org/wiki/Cooking), washing [laundry](https://en.wikipedia.org/wiki/Laundry), or [food preservation](https://en.wikipedia.org/wiki/Food_preservation).

Examples include refrigerators, washing machines, air-conditioner, etc

**Consumer electronics –** Consumer electronics or home electronics are electronic (analog or digital) equipment intended for everyday use, typically in private homes. Consumer electronics includes devices used for entertainment, communications and recreation.

Examples includes TV, mobiles, laptops, etc

A well-designed screen:

* + 1. Reflects the capabilities, needs, and tasks of its users.
    2. Is developed within the physical constraints imposed by the hardware on which it is displayed.
    3. Effectively utilizes the capabilities of its controlling software.
    4. Achieves the business objectives of the system for which it is designed.
    5. To make an interface easy and pleasant to use, then, the goal in design is to:
    - Reduce visual work.
    - Reduce intellectual work.
    - Reduce memory work.
    - Reduce motor work.
    - Minimize or eliminate any burdens or instructions imposed by technology.

**III-PROCEDURE**

Design interface for any two of the following:-

[microwave ovens](https://en.wikipedia.org/wiki/Microwave_oven), [toasters](https://en.wikipedia.org/wiki/Toaster), [humidifiers](https://en.wikipedia.org/wiki/Humidifier), [food processors](https://en.wikipedia.org/wiki/Food_processor) , [coffeemakers](https://en.wikipedia.org/wiki/Coffeemaker), refrigerators, washing machines, air-conditioner

* + Draw and show Poor User Interface for microwave oven using any tool.
  + Draw and show Good User Interface for microwave oven using any tool.
* Identify various functions/buttons/elements that you require on your home appliance.
* Clearly specify function and label of each button required on the appliance.
* Find operational sequences for carrying out various tasks on your appliance.
* Freeze the list of buttons finally required on your appliance layout.

**IV-IMPLEMENTATION**

Design interface for any two of the following:-

| **Wrist Watch** | **Smart Apple Watch** |
| --- | --- |
|  |  |
| * The wrist watch has a very minimal design * It shows only the time * The straps are not changeable and wears out after certain amount of time. | * Quick access to notifications. * Never miss your calls. * Personalized information and health tracking. * Make calls and send messages. * Emergency and Fall detection |

| **Manual Coffee Maker** | **Automatic Coffee Machine** |
| --- | --- |
|  |  |
| * You have to practice learning how to use it well; * Once you have achieved manual skills it will be difficult to drink other coffees. * inability to customize the machines or any extraction step; | * simple and intuitive design. * customize the machines or any extraction step. * The machine can be made available to everyone, employees and/or customers. * No coffee or water is wasted, as everything is dosed perfectly and thoughtfully. |

**V-CONCLUSION**

We have learned the good and poor Interface for microwave oven and Land-line

We have redesigned the Interface for Watch and Coffee-Maker

**VI- REFERNCES**

[**https://www.tutorialspoint.com/human\_computer\_interface/interactive\_devices.htm**](https://www.tutorialspoint.com/human_computer_interface/interactive_devices.htm)

**VII-POST LAB QUESTION-ANSWER**

**Q1 What constitutes good design?**

There’s definitely more than one way to explain it, but if I were to describe designers in one term, it would be “problem solvers”. Good design is one that fills the gap between business goals and user needs. In order to fill this gap, a process must be followed. A process that takes into consideration best practices of user experience (UX) and usability guidelines to produce the desired outcome.

Good design is one that is tailored for the human use, and not one that is only functional or usable. A good designer knows how to get into the mindset of his users, and turns their needs into a meaningful, desirable, and easy-to-use product or service.