BITM 2313
HUMAN COMPUTER INTERACTION

LAB 3: CONCEPTUAL MODELS TO PHYSICAL DESIGN

BITM 2313	SEMESTER 2	SESSION 2020/2021

1.0 OBJECTIVE

To analyze the devices and construct a prototype design for various devices.

2.0 INTRODUCTION

Wearable technology includes any device that can be worn and provides various functions to suit our lifestyles. Some of the examples of wearable devices such as smartwatches, jewellery, rings, wristbands, VR devices, fitness trackers, or any body-mounted sensors. The use of wearable devices become more common for the past few years and continue gaining attentions from both customers and technology designers.

This is a glimpse of future wearables - https://youtu.be/vCvwPAZx_o0

3.0 DESIGNING USER INTERFACES OF WEARABLE DEVICES

Here is 11 tips in designing user interface for wearables by Nick Babish (2019):

- **Design For *Glanceability***

Glanceability refers to information being designed for short moments of interaction. The concept was introduced through screenless fitness trackers, which used lights to explain to the user what's going on. Due to wearables' limited screen real estate, designers must focus on displaying only the most critical information which user should be able to consume in less than 5 seconds.

- **Design for Context**

Designing for wearables is designing for context. Smart devices are full of sensors and it's possible to utilize built-in device sensors to determine user context – help enhance the user's experience by making the context-relevant information glanceable.

- **Design Lightweight Interactions**

If a user interaction takes more than 10 seconds, it's time to go back to the drawing board and redesign your interface. Minimize interactions and keep interfaces simple by only showing what's essential for a user to complete a task.

- **Keep It Simple**

When working on wearable UX, avoid the temptation to put as many features and information in the wearable. Follow simple rules:

- ✓ Don't put more actions or information than the user needs, otherwise, it will disrupt the experience.
- ✓ Make interactions as easy as possible. Design singular, focused tasks: users should be able to do and see just one thing at a time.

- **Design a Clear Minimalistic Interface**

Users must be able to read whatever you put on the screen, and easily interact with it while moving. Everything from color to typography in wearable UI should be simple and straightforward:

- ✓ Sharp contrast.
- ✓ Simple typography – Sans Serif is one of the most readable
- ✓ Enough space between elements. Space can make or break a design on a small screen - proper balance that will help you to provide function and make wearable UI more glanceable.

- **Minimize Interruption**

Even on large-screen smartphones, incoming notifications and alerts are often disruptive. A few simple rules to follow when designing notifications for wearables:

- ✓ **Reduce the number of notifications.**
- ✓ **Push value.** When you do need to notify a user, you should make sure the notification is valuable for the user. Pushing relevant information at the right point of time can enhance user experiences.
- ✓ **Customization settings.** Make it possible for users to select how they would like to be notified (some will prefer a vibration and a screen glow, while others will select just a screen glow).

- **Opt For More Privacy**

Designers should always opt for more privacy in wearable UI. A few practical recommendations:

- ✓ Be aware of which way the device is facing and display content accordingly. Inward allows for more personal content to be displayed, outward should default to a blank screen.
- ✓ The same applies to notifications: vibrate first, display second.

- **Leverage Non-Visual User Interface**

When designing wearable UX, try to utilize not only touch, but also sound and vibrational communication. Consider voice input to compose text messages or to schedule activities; notify users with vibrations and sounds.

- **Interaction With Other Devices Is Important**

It's important to integrate a wearable with the existing devices in a user's digital ecosystem and use the strengths of a wearable to make the ecosystem better.

- **Design for Offline Usage**

Like any other digital devices, wearables will experience connectivity problems. When you design wearable UI, always try to provide core functionality in offline mode.

- **Check What's Viable**

It's important to consider both the capabilities and limitations of the platform when designing apps for wearables. Research what is possible with the software development kit (SDK) and what physical capabilities are available on the device.

4.0 LAB ACTIVITY

In a group of three students, choose one wearable device that you are familiar with – gaming VR device, smart watch, fitness tracker or other devices (see examples as below). **Identify what are the current limitations of its user interface and brainstorm possible solutions to enhance user interactions.**

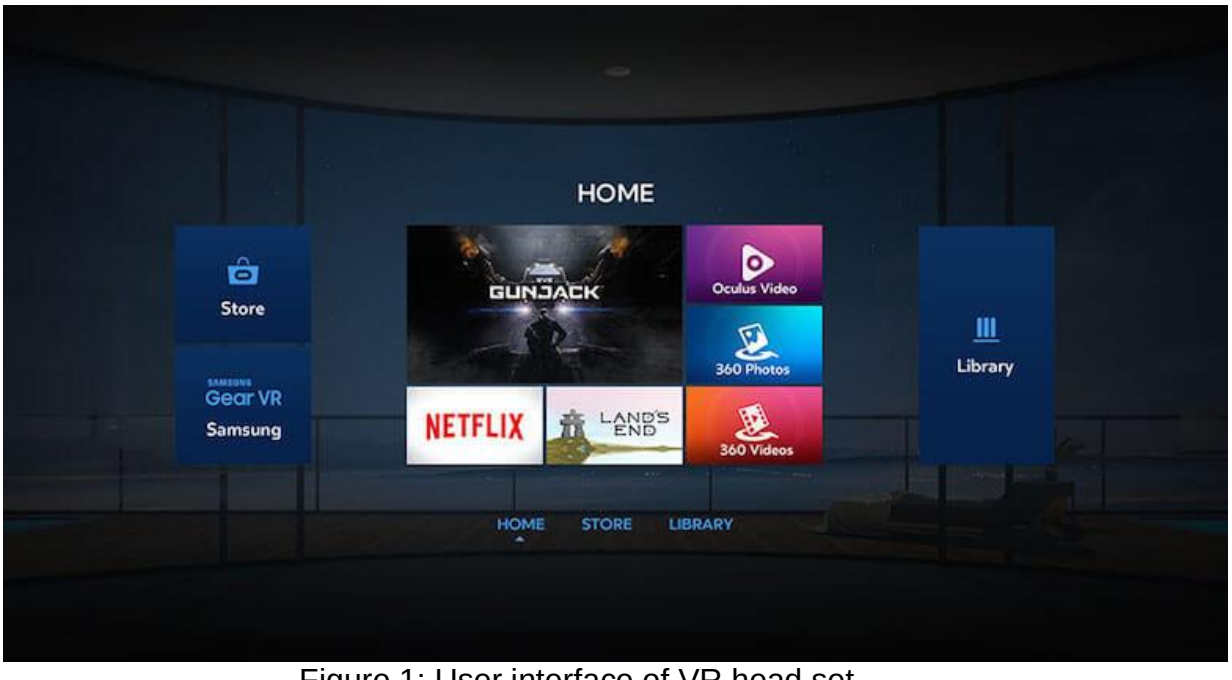

Figure 1: User interface of VR head set

Figure 2: Fitness tracker

Figure 4: Smartwatch