**USER UNTERFACE**

**ASSIGNMENT 5**

**(1)Basic Principle Of User Interface Design**

The principles of user interface design are intended to improve the quality of user interface design. The structure principle: Design should organize the user interface purposefully, in meaningful and useful ways based on clear, consistent models that are apparent and recognizable to users, putting related things together and separating unrelated things, differentiating dissimilar things and making similar things resemble one another.

**USABILITY**

It is important to realize that usability is not a single, one-dimensional property of a product, system, or user interface. ‘Usability’ is a combination of factors including: Intuitive design: a nearly effortless understanding of the architecture and navigation of the site Ease of learning .

To improve usability, it is important to emphasize the following three aspects :

1. The interface should rapidly become familiar to the users.

2. Users should be able to complete their tasks easily and as fast as possible.

3. The way the interface works should be easy to remember upon revisiting the web site.

Usability .

**Choosing Interface Elements**

Users have become familiar with [interface elements](https://www.usability.gov/how-to-and-tools/methods/user-interface-elements.html) acting in a certain way, so try to be consistent and predictable in your choices and their layout. Doing so will help with task completion, efficiency, and satisfaction.

**Interface elements include but are not limited to:**

1. Input Controls: buttons, text fields, checkboxes, radio buttons, dropdown lists, list boxes, toggles, date field
2. Navigational Components: breadcrumb, slider, search field, pagination, slider, tags, icons
3. Informational Components: tooltips, icons, progress bar, notifications, message boxes, modal window.
4. Containers: accordion

**(2) Cognitive Ergonomics**

Cognitive ergonomics is a scientific discipline that studies, evaluates, and designs tasks, jobs, products, environments and systems and how they interact with humans and their cognitive abilities. It is defined by the International Ergonomics Association as "concerned with mental processes, such as perception, memory, reasoning, and motor response, as they affect interactions among humans and other elements of a system.

**Identification and understanding  of interfaces elements**

For an interface to be efficient, users must be able to understand the features and functions of the interface's elements. If the users don't know what to do or if they don't understand the interface rapidly, they won't be able to use it easily.

**The law of least effort**

A user, for different reasons, doesn't want to lose time nor energy (physical and cognitive). So, users have a tendency not to learn nor remember functionalities if they don't seem useful.

A good design will consider cognitive ergonomics based on the tasks that can be completed to allow new users to complete its tasks easily, rapidly, and in an as intuitive as possible way.

**principles of cognitive ergonomics**

**Use of stereotypes**

The stereotype is a concept very closed to the use of standards. In facts, good standards generally follow a stereotype .

**Simplify the presentation of informations**

Well organized information makes understanding easier and faster. Using design principles such as unity, proximity and alignment greatly improves the interface quality.

**Using redundancies**

Redundancies have to do with consistency, standards and stereotypes. It means to repeat the message many times in different ways to reduce the risk of errors to occur.

**Using patterns (pop-out effect)**

Using a pattern makes information easier to understand and anything unusual sticks out very efficiently.

**(3) Essential UI design laws**

User experience design is the process of manipulating user behavior through usability, usefulness, and desirability provided in the interaction with a product. User experience design encompasses traditional human–computer interaction design and extends it by addressing all aspects of a product or service as perceived by users.

**10 essential UI (user-interface) design tips**

1. Know your users.
2. Define how people use your interface.
3. Set expectations.
4. Anticipate mistakes.
5. Give feedback—fast.
6. Think carefully about element placement and size.
7. Don’t ignore standards.
8. Make your interfaces easy to learn.
9. Make decision-making simple.
10. Listen to the data.

**POLA principle**

POLA stands for Principle of least astonishment. It states that if a necessary feature has a high astonishment factor, it may be necessary to redesign it.

**MAYA principle**

MAYA stands for Most advanced yet acceptable. It states that since people are naturally resistant to change, novelty and innovations, it is important to rely on standards as much as possible.

**Fitts’s Law**

Fitts's law is stating that the time it takes to acquire a target is a function of the distance to and size of the target. In other words, it means : the farther away a target is, the larger it needs to be in order for a user to be able to reach it easily.

**Zeigarnik effect**

The Zeigarnik effect states that people tend to remember better uncompleted or interrupted tasks than completed tasks and that it is very difficult for people to leave an uncompleted task.