**Week 2 Tasks (THEORY)**

**Task 1**

## THE TCP/IP MODEL

Transmission Control Protocol/Internet Protocol is referred to as TCP/IP. In order to provide a very dependable, end-to-end byte stream across an inconsistent internet connection, TCP/IP Stack is especially created as a model. The TCP/IP model's functionality is separated into four levels, each of which comprises a different set of protocols. Each layer of the TCP/IP server architecture is defined in accordance with a particular purpose that it is intended to carry out. To convey the data from one layer to another, these four TCP/IP layers cooperate.

\* Application Layer

\* Transport Layer

\* Internet Layer

\* Network Interface

**Task 2**

\* GOOGLE 216.58.223.206

\* FACEBOOK 102.132.101.35

\* TESLA 184.50.204.169

### SUBNETS

#### 10.10.10.0

\* 10.10.10.0/26 subnet mask: 255.255.255.192

\* 10.10.10.64/26 subnet mask: 255.255.255.192

\* 10.10.10.128/26 subnet mask: 255.255.255.192

\* 10.10.10.192/26 subnet mask: 255.255.255.192

#### 192.168.0.0

\* 192.168.0.0/18 subnet mask: 255.255.192.0

\* 192.168.0.64/18 subnet mask: 255.255.192.0

\* 192.168.0.128/18 subnet mask: 255.255.192.0

\* 192.168.0.192/18 subnet mask: 255.255.192.0

#### 172.168.1.0

\* 172.168.1.0/26 subnet mask: 255.255.255.192

\* 172.168.1.64/26 subnet mask: 255.255.255.192

\* 172.168.1.128/26 subnet mask: 255.255.255.192

\* 172.168.1.192/26 subnet mask: 255.255.255.192

**Week 3 Tasks (THEORY)**

1**. Describe what you understand by Scrum, and elaborate on some of it's benefits in software development.**

Scrum is a project management paradigm that stresses collaboration, responsibility, and incremental progress toward a well-defined objective. The framework starts with a basic premise: Begin with what is visible or known. After that, monitor progress and make changes as needed. Scrum is frequently used in Agile software development.

**The Advantages of Scrum Methodology**

Scrum's primary advantages include the following:

**Quality product:** The Scrum approach incorporates input and ongoing improvement at the Sprint retrospective. As a result, development teams who employ the process produce high-quality products.

**Teamwork :** Scrum creates cohesive software development teams that communicate effectively, meet deadlines and solve problems together. Members trust and respect one another and recognize the value of their time. This might imply restricting the daily Scrum to a specific time frame. Some software development teams incorporate a hacking sprint into their development process. It enables developers to work on new concepts, experiment with new ideas, and claim ownership of projects.

**Flexibility :** Scrum teams must adjust their tools and methods to changing conditions as they occur. Product definitions can change as development continues, and good teams can implement such changes in a few iterations. Regular product backlog meetings allow a team to alter priorities before moving items into sprints.

**Risk has been reduced :** Scrum emphasizes a predictable, sustainable delivery speed and continuous feedback, which allows teams to manage risk early and often. Short sprints allow teams to fail quickly if an idea does not work, reducing the chance of failure.

**Reduced time to market :** Scrum promises to deliver products and features in predictable increments through the use of well-defined sprints. It is not necessary to complete the full product before releasing features. Sprints are intended to introduce shippable features at each increment. Complex items are whole products made up of those supplied characteristics.

**Better return on investment (ROI):** The combined benefits of Scrum result in a higher ROI. Constant feedback results in less costly errors later in the process and a better product with fewer flaws. Reduced time to market and incremental releases result in increased revenue.

2. **From the Agile Manifesto, complete the following:**

Individuals and interactions over processes and tools

Working software over comprehensive documentation

Customer collaboration over contract negotiation

Responding to change over following a plan.

**Article on UI/UX Fundamentals**

Two of the phrases used in web and app design that get mixed up and confused the most are UI design and UX design. On the surface, they appear to be describing the same thing because they are frequently combined into a single word. Finding accurate descriptions of the two that don't go too deep into jargon is frequently difficult.

UX and UI are, in fact, two sides of the same coin.

Consider it like this: User experience is all about how a product feels. A product's visual interface is its main focus. User interface design, or UI design, is different from user experience design, or UX design. UI refers to how something appears and how you use it. UX is the way something functions.

**User Interface (UI) Design: What is it?**

The practice of creating software or digital device interfaces with an eye toward aesthetics or style is known as UI design. Designers strive to produce designs that people will find enjoyable and simple to use.

Making user interactions as easy and effective as feasible is the aim of user interface design. A well-designed user interface makes it easier to complete the task at hand without calling attention to itself. By affecting how the user interacts with the interface and enhancing the design's visual appeal, graphic design and typography are used to promote usability. Design aesthetics may either improve or impair users' ability to use the interface's features.

**The importance of user interface design**

The visual design of a website is equivalent to interior decoration, if a website were a house. Because it has the power to create or break your consumer base, user interface design is crucial. It may mean the difference between a website or app being successful or unsuccessful. Additionally, it may determine whether visitors stay on your website or leave. The most apparent reason to invest in effective user interface design is for commercial purposes: if you want people to use your website, download your app, or make a purchase from you, you need to avoid frustrating them and having them abandon the process.

The real appearance and feel of the website are determined by the user interface (UI) design. It is what you interact with and see on the screen. It serves as the "skin" of the website. Colors, fonts, page layouts, buttons, and other graphic components used in web design are included in the user interface (UI).

**How does UX design work?**

"A website with a gorgeous layout but subpar functionality is like a Lamborghini with a Toyota engine," said one author. More than simply a catchphrase, UX design. A website that people like visiting vs one they can't wait to leave is the difference.

A website's or online application's total user experience must be shaped by UX designers, who concentrate on how the interface feels, works, and appears.

UX design is the process of raising user satisfaction with a product by making it more usable, accessible, and enjoyable to engage with. By addressing all facets of a product or service as they are perceived by consumers, user experience design extends traditional human-computer interaction (HCI) design.

User experience design combines traditional design and engineering components with parts from social sciences including psychology, sociology, and anthropology. The overall aesthetic of a product or service is the responsibility of UX designers.

**The importance of user experience design**

The success of your business is directly impacted by user experience (UX) design, which in the case of a website, covers everything from aesthetics to usability. Positive customer experiences increase the likelihood of repeat business, whilst negative ones can lead to bad brand perceptions that consumers will spread.

The user experience (UX) of a product is the responsibility of UX designers. They have the responsibility of ensuring that the product proceeds logically from one stage to the next. Usability comes first when UX designers are solving problems, then aesthetics.

**The differences between UI and UX design.**

You can't have one without the other; UI and UX design go hand in hand.

The goal of user interface (UI) design is to make the product visually appealing. It involves adding visual flourishes like colors, borders, symbols, shadows, and many other things. Additionally, it involves ensuring that those components form a coherent whole from an aesthetic and functional standpoint.

User experience (UX) design is the method of methodically enhancing a product to make it more user-friendly, efficient, and intuitive. This requires taking into account how various components of the product interact with one another and how people view them.

Thus, keep in mind that your user interface is simply one component of the equation when comparing UI and UX design. There is no distinction from the viewpoint of a user. Your reaction to a good or service will determine how you feel and what you think. No matter if you are engaging with a web page or an app, using a desktop computer or a mobile phone, the quality of your experience is the same. There is a significant distinction from a designer's viewpoint. They are two very distinct academic disciplines. They don't overlap even if they have some same interests.

**What then distinguishes them?**

Both components play an important role in a product and interact closely. Even However, the positions themselves are fairly distinct, relating to quite different stages of the process and the design discipline. UI design is more similar to what we think of as graphic design, but UX design is a more analytical and technological area, even though the duties are considerably more complicated. Although UI and UX are frequently discussed together, they are fundamentally separate concepts.

The goal of UI designers is to make everything appear beautiful. They are focused on aesthetics and developing products with appealing designs that people would find appealing. To ensure that their designs adhere to the UX designer's specifications, UI designers collaborate closely with UX designers.

UX designers put a lot of effort into making products simple to use. They are interested in improving the flow of information, such as how simple it is for consumers to get from point A to point B. Additionally, they make sure that the items are interesting so that customers would want to keep using them.

The process of creating a website (or app) that is both functional and intuitively simple to use is known as user experience design. The "pleasure" component of a user's experience is its main focus.

On the other side, UI design focuses on ensuring that each screen looks its best visually and fulfills its purpose in a product as a whole.

The user experience refers to how customers react to using your product or service. Users who have a pleasant experience with a product or brand are more likely to remain loyal to it.

**Conclusion**

UI and UX are separate yet complement one another. UX design requires further analysis. Its foundations are in human psychology and cognitive behavior. More emphasis is placed on aesthetics in UI design software, or if a product looks good. The framework or strategy that directs how a designer or team of designers approach a project is known as the UX design process. It's the sequence of processes or activities a designer use to best address a user's issue.

The techniques and procedures used to translate UX design into reality are known as the UI process. The definition of style and brand standards that must be adhered to in order to ensure a consistent user experience across all of your goods forms the basis of the UI process.

While UI is concerned with the appearance and feel of a website or app, UX is more focused on the functioning and content of such platforms.