

Mid Term

Registration No	BS(CS)/1-20/M01008
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Title of Assignment	Mid Term
Title of Course	Human Computer Interaction
Name of Faculty Member	Sir Waheed Ahmed
Submission Date	23-11-22



Course Title: Human Computer Interaction

Mid Term Examination

Fall Semester- 2022

Instructor Name: Sir Waheed Ahmed

Date: 23-Nov-2022

Faculty of: Computer Science

Duration: 6pm - 9pm

Program: BSCS

Marks: 30

Instruction: Please follow the step wise instructions mentioned below:

1. After completion of the assignment, please save your file as a PDF file
 2. Submit your paper on LMS, in the respective course page
 3. When submitting a pop-up User agreement will appear on your screen. Tick "I Agree" at the bottom of this pop-up sign.
 4. Continue with submission process as always
 5. Submission of paper will not be accepted after mentioned time. (5 Hours)
 6. Kindly avoid Copy and Paste. All Papers will be passed through TURNITIN to check plagiarism. Max 10 Marks will be deducted if found guilty of copy / paste
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Note: Attempt the following questions. All questions carry equal marks except Q1.

Q1: Multiple Choice Questions (MCQS) (10 Marks)

1- The goal of interactive systems design is designing for maximum usability

A. reducing the cost

B. designing for maximum usability

C. working within the constraints

D. none of the above

2- A software might allow a user to interact via **all of the mentioned**

- a) keyboard commands
- b) mouse movement
- c) voice recognition commands
- d) all of the mentioned**

3- What are the three types of reasoning **Adductive, Inductive, and Deductive**

- a) Deductive, Productive and Inductive
- b) Adductive, Inductive, and Deductive**
- c) Inductive, Adductive and Reproductive
- d) Productive, Reproductive and Deductive

4- The **conceptual** model should match the **Mental** model.

- a) User, conceptual
- b) Conceptual, mental**
- c) Mental, central
- d) Conceptual, central

5- Visually impaired persons can interact with the outside world using their Both **sense of touch and sense of hearing**

- a) Sense of sight
- b) Sense of hearing
- c) Both sense of touch and sense of hearing**
- d) Sense of touch

6. Which of the following life cycle model can be chosen if the development team has less experience on similar projects? **Spiral**

a) **Spiral**

b) Waterfall

c) RAD

d) Iterative Enhancement Model

7- Which of the following are important in the design focus of HCI? **Thinking of the user**

a) **Thinking of the user**

b) Testing the HCI

c) Involving the users

d) All of the above

8- Which of the following is not true? **Usability is concerned with adding complexity to the system**

a) Utility refers to the functionality of a system

b) **Usability is concerned with adding complexity to the system**

c) Usability is concerned with making systems easy to use

d) Poorly designed computer system can be extremely annoying to users

9- Using icons on the desktop to represent operations is a type of **Cultural** constraint.

a) Physical

b) Logical

c) **Cultural**

d) None of these

10- Models are used in design to, **Generate and evaluate the design**

- a) Generate the design
- b) Evaluate the design
- c) **Generate and evaluate the design**
- d) None of the given

Questions Section

Q2: (a) Define HCI? Why do you think this subject is important for Computer Science? (5 marks)

ANS: Human-Computer Interaction (HCI) is a multidisciplinary field of study focused on the design of computer technology and, in particular, on the interaction between humans (users) and computers. While HCI was initially concerned with computers, it has since expanded into almost all forms of information technology design.

HCI is essential in designing intuitive interfaces that are typically accessed by people with different abilities and expertise. Most importantly, human-computer interaction is useful for communities that lack the knowledge and formal training to interact with specific computing systems. With effective HCI designs, users don't have to think about the complexity and complexity of using a computing system. User-friendly interfaces ensure that user interactions are clear, precise and natural.

(b) What is your understanding of User Interface and define its two components? (5 marks)

ANS: The user interface (UI) is the point of human-computer interaction and communication in a device. This can include display screens, keyboards, a mouse and the appearance of a desktop. It is also the way through which a user interacts with an application or a website.

Types of user interfaces

The various types of user interfaces include:

- 1- graphical user interface (GUI)
- 2- command line interface (CLI)

Q3: (a) What is Prototyping & OAI Model in HCI? (5 marks)

ANS : Prototyping is an experimental process where design teams implement ideas into tangible forms from paper to digital. Teams create prototypes of varying degrees of fidelity to capture design concepts and test them on users. With prototypes, you can refine and validate your designs so your brand can release the right products.

The OAI model helps the designer understand the complex processes that a user must perform in order to successfully use an interface to perform a certain task. Designers model actions and interface objects based on a known example, and then fine-tune those models to suit the task and the user.

(b) State Heuristic Principles in detail and where do you think Google Search engine website lies in? (5 marks)

ANS: 8 Heuristic Principles - Jakob Nielsen (Usability Heuristics)

- 1- Visibility of system status.
- 2- Match between the system and the real world
- 3- User control and freedom.
- 4- Error prevention.
- 5- Help users recognize, diagnose, and recover from errors.
- 6- Consistency and standards.
- 7- Recognition rather than remembrance.
- 8- Flexibility and efficiency of use

Google was founded by Sergey Brin and Larry Page when they were just students at Stanford University. Google was the job the pair worked on for their Ph.D. program. According to their thesis, Google (then known as Backrub) differed from other search engines by focusing on the relationships between sites (mainly links). The focus on links was a significant change from other search engines where access to ranking information was based on how often specific search terms appeared on search engine results pages (SERPs). This concept changed the way online search would work ever since.

Google Analytics is a free resource provided by Google that allows you to view data about the visitors that come to your website. It's a great tool for understanding the areas of your site that attract users. It's also a useful tool if you're profiling your ideal customer. Armed with this information, you can create better content and optimize your website to rank better. Although Google Analytics can be overwhelming, there are free resources to help you become more familiar with the program. Our favorites include:
