YEAR: 2024
SEMESTER: 2
ASSESSMENT: Class Test 2

SUBJECT NAME:	Human Computer Interaction
SUBJECT CODE:	HMD117V
QUALIFICATION(S):	ADMC20/ADMC20

PAPER DESCRIPTION: CLOSED BOOK   **DURATION:** 2 HOURS   **PAPER:** ONLY

SPECIAL REQUIREMENTS

X **NONE**
☐ **NON-PROGRAMMABLE POCKET CALCULATOR**
☐ **SCIENTIFIC CALCULATOR**
☐ **COMPUTER ANSWER SHEET**
☐ **GRAPH PAPER**
☐ **DRAWING INSTRUMENTS**

OTHER:

INSTRUCTIONS TO CANDIDATES: ANSWER ALL QUESTIONS

Check each question for additional instructions

TOTAL NUMBER OF PAGES INCLUDING COVER PAGE: 7

TOTAL NUMBER OF ANNEXURES: 0

EXAMINER: Miss VM Booi   **FULL MARKS:** 40

MODERATOR: **TOTAL MARKS:** 40

INSTRUCTION TO CANDIDATES:

INSTRUCTIONS ON HOW TO WRITE THE TEST ON ELECTRONIC CAMPUS (EC):

1. Open the **browser**.
2. Type http://ec.tut.ac.za in the address field of the browser and press enter.
3. Click **Login.**
4. Type in student number for user name and if you are using EC for the first time you must use your student number as your password. (Not applicable any more. Please change to the current situation).
5. Alternatively, you must enter your password. (Same here).
6. Click **Login button**.
7. Click [**Continue**]
8. Select [**Student**]
9. Select [**Tests**]
10. Select [**Webtest 4**]
11. Type or Select **HMD117V** into the first text field.
12. Type or Select **20241** into the second text field.
13. Type or Select **G** into the third text field (The "**G**" must be a capital letter).
14. Click "**Next**"
15. Click on the "**Write**" button.
16. Click on "[**Start**]" and you will be in the test to submit your answers.
17. Click on [**Section**] on the test to submit each Questions, and click [Go] to submit your answer- Copy your answer and paste it in the space provided.
18. Click [**Test**] to move to the next or previous Questions.
19. Under each question click edit to update your answer.

Question 1 [10]

Preparation:

- Log into EC and select from the list, your answers in the provided spaces for each question under Section 1.

1.1 Which interface type provides tactile feedback through touch-sensitive surfaces or devices, enhancing the sense of touch in virtual environments?
   a. Augmented Reality (AR)
   b. Virtual Reality (VR)
   c. Mixed Reality (MR)
   d. Haptic Interface

1.2 In which interface type can users receive spoken responses and interact with virtual assistants like Siri or Alexa while being immersed in a simulated environment?
   a. Augmented Reality (AR)
   b. Virtual Reality (VR)
   c. Mixed Reality (MR)
   d. Haptic Interface

1.3 Figure 1.1 bellow indicates an example of a smart watch. What feature makes it convenient for users to stay connected on the go?

Figure 1.1

   a. Built-in compass for navigation
   b. Ability to project holographic images
   c. GPS tracking for location services
   d. Integration with smartphone notifications and calls

1.4 In virtual reality which of the senses cannot currently be portrayed?
   a. Touch
   b. Smell
   c. Sight
   d. Hearing

1.5 What is the advantage of using multiple data gathering methods in user-centered design?
   a. It simplifies the data analysis process
   b. It reduces the need for user involvement
   c. It provides a more comprehensive understanding of user needs and behaviors
   d. It increases the likelihood of bias in the data

1.6 Which data gathering method involves bringing together a small group of users to discuss their experiences and preferences?
   a. Interviews
   b. Surveys
   c. Focus groups
   d. Usability testing

1.7 How can designers ensure the ethical handling of data at scale in user-centered design?
   a. By anonymizing and aggregating user data to protect privacy
   b. By collecting personally identifiable information from users
   c. By sharing user data with third-party companies without consent
   d. By ignoring user data and relying solely on intuition

1.8 Which data analysis technique involves organizing data into meaningful categories or themes?
   a. Descriptive statistics
   b. Content analysis
   c. Correlation analysis
   d. Factor analysis

1.9 Which of the following is a challenge associated with handling data at scale in user-centered design?
   a. Lack of access to data
   b. Limited storage capacity
   c. Difficulty in data interpretation and analysis
   d. Over-reliance on user feedback

1.10 What type of data is typically analyzed in sentiment analysis?
   a. Audio files
   b. Visual images
   c. Textual data from user reviews, comments, and social media posts
   d. User location data

Scenario: LearnWithEase Online Tutoring Application (LOTA)

LearnWithEase is an innovative online tutoring platform aimed at high school students seeking academic support and improvement. With a commitment to personalized learning and accessible education. LearnWithEase wants to provide a web-based application for these groups of students who come from diverse backgrounds and different abilities.

The service provider wants an application that will allow people from different locations to register before they could access the material. The application must provide the students with a dynamic learning environment where students can connect with qualified tutors, access resources, and engage in interactive learning experiences. The application must be easily accessible and it must be user friendly. In addition to this the application must visually pleasing and it must encourage users to learn how to use it without any difficulties.

The company has requested your services as a UI/UX designer to help them towards the design of the application.

Instructions

- Answer **all** of the following questions, making any reasonable assumptions that are necessary.

- **All of your answers must refer to the scenario in detail.**

- Each answer will be marked independently of your other answers. Thus, you should **not** refer back to information provided in earlier answers.

- Open text editor (notepad++ is recommended) or MS Word and save the text file in your student number folder. All answers for Question 2 and Question 3 must be written and saved inside this file and then follow the instructions on page 2 on how to upload your answers.
- Once you start the test, you must finish it, as it is a timed based assessment.
- You are not allowed to change device once you have started with your test.
- There will not be any emailed test that will be accepted.
- There is no web test rewrite, if you have missed this test or if your time is up.

Question 2 **[17]**

Learning outcome: D.1. Understanding the different interface types.

2.1 Augmented reality is one of the growing technologies and they are widely used in the academic environment. Discuss, what is augmented reality? In your discussion, include the importance of its use it in the education environment. (4)

2.2 The company has suggested that **multimedia** and **mobile** interfaces will be ideal for LOTA.

    2.2.1 Discuss why these two interfaces will be ideal for the use of LOTA. (6)

    2.2.2 Identify three types of modalities you would use to access LOTA? (3)

2.3 Identify and discuss two other interface types (not mentioned in 2.1 and 2.2) that will ideal for the use of LOTA. In your discussion, include how you planning to incorporate these interface types into your design. (4)

Submitting your answers when you done:

- Copy your answers and paste them in the spaces provided in **Section 2.**

Question 3 **[13]**

Learning outcome: E.1. Collecting data using data gathering techniques.

Learning outcome: E.2. Understanding data analysis, interpretation, and presentation.

Learning outcome: E.3. Data at scale.

3.1 **Triangulation** and **Pilot studies** are some of the key issues that needs to attention before the data gathering process. Describe, these two key issues. (2)

3.2 You have decided to use **questionnaires and interviews** to gather data from the targeted user groups.

   3.2.1 Identify the type of interview you will conduct. (1)

   3.2.2 Explain how you would use the data gathering techniques identified in 3.2.1. (6)

3.3 Identify and explain the data type that you will collect using the methods/techniques identified Question 3.2. (2)

3.4 You want to use sentiment analysis in your study. Explain to your team, how is sentiment analysis different from traditional data analysis? (2)

Submitting your answers when you done:

- Copy your answers and paste them in the spaces provided in **Section 3**.

***************************Class Test 2 ends here***************************