YEAR: 2024

SEMESTER: 1

ASSESSMENT: Formative Assessment 1

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

PAPER DESCRIPTION: CLOSED BOOK   **DURATION:** 3 HRS 00 MIN   **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: 10

TOTAL NUMBER OF ANNEXURES: 0

EXAMINER: Miss VM Booi   **FULL MARKS:** 50

MODERATOR: Mr. XP Piyose   **TOTAL MARKS:** 50

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

1.   Create a folder on **D:\ Drive** and rename the folder your **student number**.
2.   Save all your work in the folder you have created
3.   Open a text editor (notepad++ is recommended) or MS Word and save your document in your student number folder.
4.   Open the **browser**.
5.   Type http://ec.tut.ac.za in the address field of the browser and press enter.
6.   Click **Login.**
7.   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).
8.   Alternatively, you must enter your password. (Same here).
9.   Click **Login button**.
10.   Click [**Continue**]
11.   Select [**Student**]
12.   Select [**Tests**]
13.   Select [**Webtest 4**]
14.   Type or Select **HMD117V** into the first text field.
15.   Type or Select **20241** into the second text field.
16.   Type or Select **F** into the third text field (The "**F**" must be a capital letter).
17.   Click "**Next**"
18.   Click on the "**Write**" button.
19.   Click on "[**Start**]" and you will be in the test to submit your answers.
20.   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.
21.   Click [**Test**] to move to the next or previous Questions.
22.   Under each question, click edit to update your answer.

Question 1 Multiple Choice) [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 design principle does **Figure 1.1** support?
   a. Feedback
   b. Effectiveness
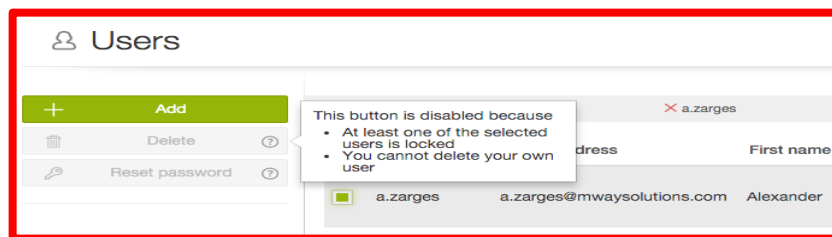   c. Safety
   d. Constraints

Figure 1.1

1.2. HMD117V students are using the universities' LMS and they are able to access the material loaded by the lecturers as soon as they are loaded. Which usability principle is support in this scenario?
   a. Attention
   b. Memory
   c. Effectiveness
   d. Efficiency

1.3 Which of the following correctly describe the core questions used to help the design team when analysing the problem space?
   a. Identify new problems arising from the product.
   b. Identify existing problems with the product**.**
   c. Always design for new user experience as the market or technology is changing every day.
   d. Identify which conceptual model will be best suited for the problem sated.

1.4 The _____ design equates with the traditional values of usability.
   a. Visceral
   b. Behavioural
   c. Reflective
      User experience

1.5 The _____ interaction type allows a dialogue with a system, where users can speak via an interface or type a question.
   a. Instructing
   b. Manipulation
   c. Conversing
   d. Exploring

1.6 **Figure 1.2** below indicates a reminder to the user about a certain event. Which cognitive framework is applied in this design?
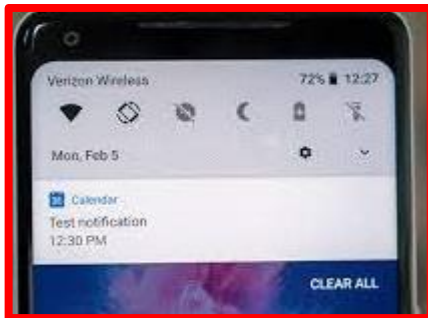

Figure 1.2
   a.   Distributed cognition
   b.   Direct Manipulation
   c.   External cognition
   d.   Responding

1.7 In the education sector, _____ helps the students to easily acquire, process, and remember the information. This interface or type of application makes learning itself more engaging and fun.

 Figure 1.3
   a. augmented reality
   b. virtual reality
   c. command based interface
   d. visual interface

1.8 The _____ interfaces allows user to use them anywhere and anytime.
   a. web
   b. mobile
   c. tangible
   d. metaphor

1.9 _____ helps in investigating a phenomenon from two or more different perspectives.
   a. Triangulation
   b. Questionnaires
   c. Interviews
   d. Observations

1.10 Network traffic can help companies to learn users' behaviour during their interaction with an application or systems in an organisation. What data gathering technique do the companies employ?
   a.   Indirect Observations
   b.   Unstructured Interviews
   c.   Direct Observations
   d.   Ethnography

Section B:

Scenario: Used Books Application (UBA)

Just Hacks is a Start-up Company founded by Tshwane South College alumnus. They have designed an innovative platform, which is aimed at streamlining the process of buying, and selling used textbooks specifically tailored for university students. This application is designed to help new comers who are looking for affordable textbooks or seniors who are trying to make some extra cash from their old books. One of the main goals of this application is that it must be easy to use and easy to learn. The application is also designed to be accessible by all the students including students living with disability and it must be accessed anywhere and anytime via web or mobile device.

The application is currently in use by the intended user group. However, the application currently is giving them problems in terms of its overall usability and user experience. The current users are having difficulties accessing the application as well as the content therein.

The company has approached you as UX/UI designer to help address these shortcomings. Below is the current interface used by the students.

Figure 1: UBA

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 to Question 4 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.

Question 2   **[14]**

Learning outcome: A.1. Understanding the process of interaction design.

Learning outcome: C.1 Understanding Cognitive aspects in interaction design.

Learning outcome: C.2. Understanding Social interaction in interaction design.

2.1 Design principles, usability goals as well as user experience goals are fundamental to every UI/UX design.

    2.1.1 Identify **two** design principles that are applicable in the design above. Discuss how these two principles are applied in the scenario. (4)

    2.1.2 Identify two usability goals that are violated in the design. Discuss how they are violated. (4)

2.2 Interaction design is about designing interactive products to support the way people communicate and interact in their everyday lives. Explain to your team the importance of including users in the design. (2)

2.3 Human cognition can help us understand the impact of multitasking on human behaviour. Considering the user group of this project, there will be different types of users using it with different abilities.

    2.3.1 Identify and briefly describe the two cognitive modes**.** (2)

    2.3.2 Information in the interface above is well presented and it is easy to see what is required. Which cognitive process is applied in the design? (1)

2.4 The students can buy or sell books without physically going to campus to perform this transaction wherever they are. Which conversational mechanism is by this design? (1)

Submitting your answers when you done:

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

Question 3 [18]

Learning outcome: B.1. Understanding and conceptualising interaction.

Learning outcome: C.3 Understanding emotional interaction in interaction design.

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

3.1 Figure 1 is designed to support different interface types.
    3.1.1 Define, what a multimedia interface is? (2)
    3.1.2 Identify and discuss three other interface type that will be ideal for use for UBA.
    (6)

3.2 Explain to your team, what are conceptual models? (2)

3.3 Some of the core concepts for conceptual models are interface metaphors, interaction types and others. Discuss why **direct manipulation** will be ideal over **instructing** interaction type for the **Used Book Application (UBA)**. (2)

3.4 Anthony Ortony et al.'s (2005) describe three levels that make up a model of emotional design. Identify and discuss how these three levels can be applicable to the design of UBA design. (6)

Submitting your answers when you done:
- Copy your answers and paste them in the spaces provided in **Section 3**.

Question 4	**[8]**
Learning outcome: E.1. Collecting data using data gathering techniques.	

4.1 Data gathering is a central part of discovering requirements and evaluation in UI/UX design, which is no exception for the UBA application.

    4.1.1 In user cantered design there are five key issues that needs attention before data gathering. **Setting up goals** and **Triangulation** are examples of such key issues. Identify two other key issues and explain their importance. (2)

    4.1.2 You have decided to use the two data gathering techniques; interviews, and questionnaires to gather data throughout the interactive design process of this project. Explain how you would use each of the two data gathering techniques. (5)

    4.1.3 Identify the type of triangulation you will use in this study. (1)

Submitting your answers when you done:

- Copy your answers and paste them in the spaces provided in **Section 4**.

**** THE END ****