Marking Schedule. Sample answers follow.

Digital Technologies: Demonstrate understanding of usability in human-computer interfaces (92006)

Demonstrate understanding of usability in human-computer interfaces involves:

- describing the purpose of human-computer interfaces
- describing usability principles and their use in human-computer interfaces.

Examine the usability of human-computer interfaces involves:

- explaining how usability principles have been applied in human-computer interfaces.
- explaining the usability of human-computer interfaces in terms of usability principles.

Evaluate the usability of human-computer interfaces involves:

- comparing the usability of human-computer interfaces
- applying usability principles to suggest improvements to human-computer interface usability.

N1	N2	A3	A4	M5	M5	E7	E8
		THREE of the FOUR of PART A and TWO correct from PART B Some parts of the description may be partial or weak.	FOUR of the FOUR in PART A and PART B all correct	All of PART C or PART D Some parts of the description may be partial or weak.	PART C and PART D	PART E Provides examples comparing the usability of own human-computer interfaces Recommends TWO improvements to EITHER their chosen interface, explaining how these would enable the interface to better address usability principles. Compares at least one usability	PART E Provides examples comparing the usability of own human-computer interfaces Recommends TWO improvements to EITHER their chosen interface, explaining how these would enable the interface to better address usability principles. Compares at least one usability

						heuristics across two different interfaces and makes a judgement on which is better Some parts of the description may be partial or weak.	heuristics across two different interfaces and makes a justified argument as to which is better

Sample Answers

PART A – SHORT ANSWER QUESTIONS

(i) Describe how Nielsen's Heuristics be considered and applied to human-computer interfaces?

Nielsen's Heuristics are a set of ten general principles for user interface design that help ensure usability in human-computer interfaces. These heuristics guide designers to create interfaces that are intuitive, efficient, and user-friendly.

(ii) In interface design, which heuristic focuses on allowing the user to cancel an unwanted action and also allows the user to undo/redo their actions?

User control and freedom

(iii) Describe Nielsen's heuristic Match Between the System and the Real World; an example may be useful.

Nielsen's heuristic "Match Between the System and the Real World" emphasizes that interfaces should use concepts, language, and visuals familiar to the user, mirroring real-world conventions. This helps users intuitively understand and navigate the system without confusion.

Example: A shopping website using a cart icon to represent items selected for purchase mirrors the real-world concept of a shopping cart, making the function immediately understandable to users. This reduces the cognitive load and enhances usability by aligning the digital experience with real-world experiences.

(iv) In regard to Mātapōno Māori, why is the correct use of macrons important?

Answers may include:
Cultural Respect and Integrity: Properly using macrons shows respect for the Māori language and culture, adhering to Mātapōno Māori principles. It recognizes the importance of the language's accuracy and the meanings it conveys.

Clarity and Accuracy: In usability and HCI, clear communication is key. Macrons distinguish between different words and meanings in Māori, ensuring that users understand the content as intended. Misuse can lead to confusion or misinterpretation.

Inclusivity: Incorporating accurate Māori language in digital interfaces ensures that Māori-speaking users feel acknowledged and included, enhancing the user experience for all cultural groups.

Legal and Ethical Considerations: In some contexts, such as government or educational materials, the correct use of macrons is a legal requirement, aligning with broader efforts to preserve and promote the Māori language.

PART B – MATCHING QUESTIONS

In this question, match the usability principle with its description.

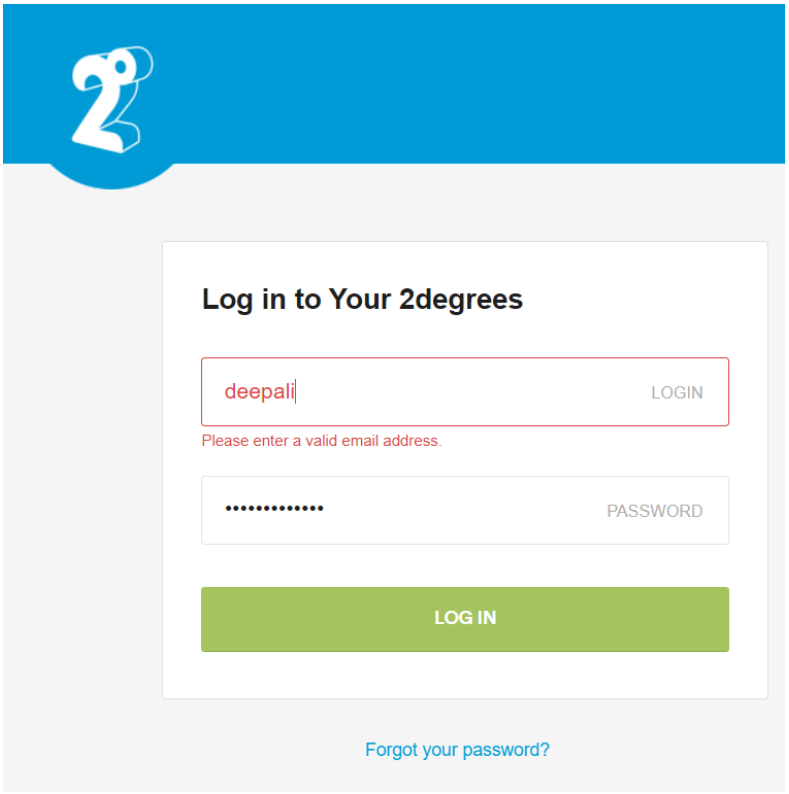
1	Letting users choose from options instead of remembering things on their own.
2	Accommodating a wide range of user preferences and allowing for more than one approach to a problem.
3	Keeping things consistent and predictable in different situations such as on mobile phones, desktops, and tablets.
4	Keeping the design simple and clear so that the important parts aren't cluttered up.

Enter the number corresponding to the description above in the box next to the heuristic below:

External Consistency	3	Recognition Rather than Recall	1
Flexibility and Efficiency of Use	2	Aesthetic and Minimalist Design	4

PART C – REAL WORLD EXAMPLES

Deepali is trying to log into her 2 Degrees account to check on her mobile plan.

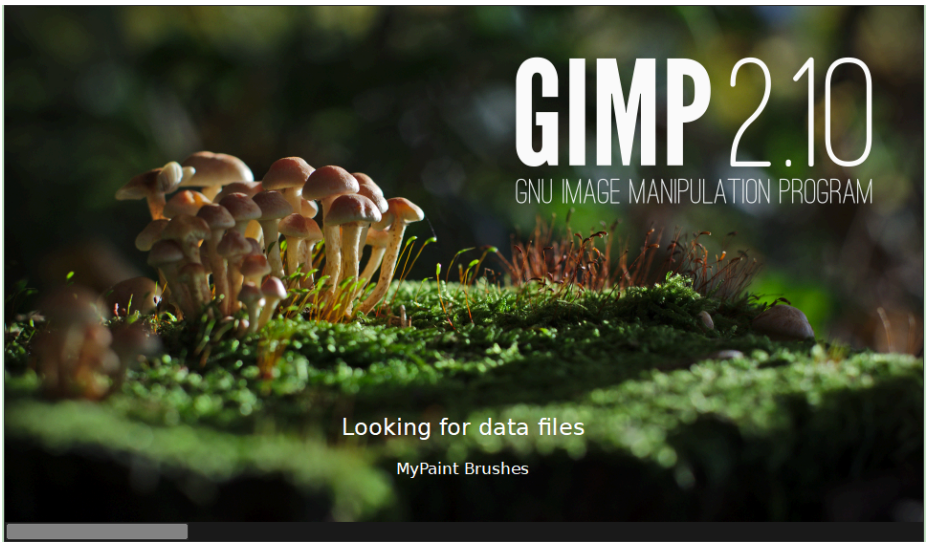


What is the interface doing to help her log into her account, once she was unsuccessful? Explain the Nielsen's Heuristics shown in the screenshot? (Aim for 100 words)

~~Error Prevention.~~
~~Error prevention involves designing interfaces that help users avoid mistakes before they occur. In the case of entering an email address, making the text red until a valid format is detected helps prevent errors by visually indicating that the input is incorrect. This real-time feedback guides users to correct their entry before submission, reducing the chance of errors and improving the overall user experience.~~

Help Users recognise, diagnose and recover from errors.
Depali had already tried to submit an invalid email address and a message appeared in red informing her (recognise) that the email address was in the wrong format or invalid (diagnose). This helps her to recover from the user error and input a correct address before being allowed to submit the form. This ensures the data gathered by the program is accurate and functions as expected.

Deepali wants to make a Birthday Card for her mother. She is going to make it in GIMP, an open source image manipulation software package.



When GIMP gets launched a grey bar appears at the bottom of the splash screen and slowly fills up. Why would this be useful to the user? Explain the Nielsen's Heuristics shown in the screenshot? (Aim for 100 words)

"Visibility of system status" refers to keeping users informed about what is happening within the system. A progress bar showing that a program is loading provides clear, immediate feedback that the system is working on a task, helping users understand that the program is not frozen and how long they might need to wait. This transparency reduces user anxiety and enhances the overall experience by ensuring they are not left guessing about the system's status.

PART D – SCENARIO QUESTIONS

Choose ONE of the following scenarios and write your answer in the box below:

(i) Imagine you are designing a mobile app to help parents easily find and schedule trusted babysitters in their area. How would you apply usability principles to create an interface that caters to their needs? Discuss at least TWO usability principles you would consider, and how you would implement them.

OR

(ii) Discuss specific ways in which Māori principles, such as using te reo Māori and incorporating tikanga Māori, can be implemented in a mobile app for Māori users to enable them to discover tramping (hiking) tracks. How would you apply Māori usability principles to create an interface that caters to their needs? Provide practical examples to illustrate your points.

(Aim for 200 words)

Scenario Chosen: __A____

Sample answer:

If I were designing a mobile app to help parents find and schedule trusted babysitters, I would focus on making the app easy to use and visually appealing by applying these two usability principles:

1. Error Prevention: To help parents avoid making mistakes, the app could include features like autofill suggestions when entering common information (such as addresses) and real-time validation for things like email addresses or phone numbers. If a parent tries to book a sitter without filling in all the necessary details, a clear message could pop up to remind them to complete the missing information, preventing errors before they happen.

2. Aesthetics and Minimalist Design: The app should have a clean and simple design so parents can easily find what they need without being overwhelmed. I would use a minimal color palette and simple icons to keep the interface uncluttered. Important features, like the search bar and scheduling options, would be prominently placed, while less critical features could be tucked away in a menu, making the app look neat and easy to navigate.

These principles would help create an app that is both user-friendly and visually pleasing, making it easier for parents to quickly find and book trusted babysitters.

PART E – OWN INTERFACE

In the following questions, discuss an interface you have studied.

Name of interface and what it is for: Blender (3d modelling software)

(i) Provide at least two examples of how applying usability principles has improved the overall user experience of the chosen interface. (Aim for 200 words)

Blender, a popular 3D modeling application, has greatly improved its user experience by applying Nielsen's usability principles:

1. Consistency and Standards: In recent updates, Blender has focused on making its interface more consistent. Earlier versions of Blender were often criticized for having a steep learning curve, partly due to

inconsistent design elements. By standardizing the layout, naming conventions, and hotkeys across different tools and functions, Blender has made it easier for users, especially beginners, to navigate the software. This consistency reduces the learning curve and allows users to focus more on their creative work rather than figuring out how the interface works.

2. Visibility of System Status: Blender has enhanced feedback mechanisms, such as providing progress bars for rendering tasks and clear indicators for ongoing operations like simulations or baking textures. These visual cues keep users informed about what the system is doing, reducing uncertainty and frustration. For example, when rendering a complex scene, the user can see a progress bar that informs them of how much time remains, which helps manage expectations and allows them to plan their workflow more effectively.

By applying these principles, Blender has become more user-friendly, enhancing the overall experience for both new and experienced users.

(ii) Referring to usability principles, suggest **at least** two improvements that could be made to the interface you studied to improve usability. (Aim for 100 words)

To improve Blender's usability:

1. Error Prevention: Introduce a confirmation dialog when users attempt to delete objects or overwrite files, reducing the risk of accidental loss. For example, before removing a mesh from a scene, a prompt could confirm the action to prevent unintended deletions.

2. Recognition Rather Than Recall: Add tooltips or context-sensitive help that appear when hovering over less commonly used features or menu items. For instance, displaying a brief description or usage tip when hovering over complex modifiers or settings would help users understand their functions without needing to recall or look up information separately.

(iii) Compare and contrast the usability of the interface you studied with other interfaces. Those interfaces can be either better or worse. Explain the differences as they relate to your previously identified usability features. (Aim for 100 words)

Blender and SketchUp differ significantly in usability. Blender offers a highly customizable interface but can overwhelm users with its complex menus and shortcuts, making it less intuitive for beginners. This complexity often conflicts with Nielsen's "Recognition Rather Than Recall" heuristic, as users need to remember numerous commands and their associated shortcuts.

SketchUp, in contrast, provides a more straightforward and user-friendly interface with easy-to-access tools and intuitive icons. This design aligns better with Nielsen's "Recognition Rather Than Recall", as its simpler layout and visual cues reduce cognitive load. However, SketchUp's limited advanced features may not cater to experienced users needing extensive functionality, whereas Blender's depth is sometimes achieved at the expense of immediate clarity and ease of use.