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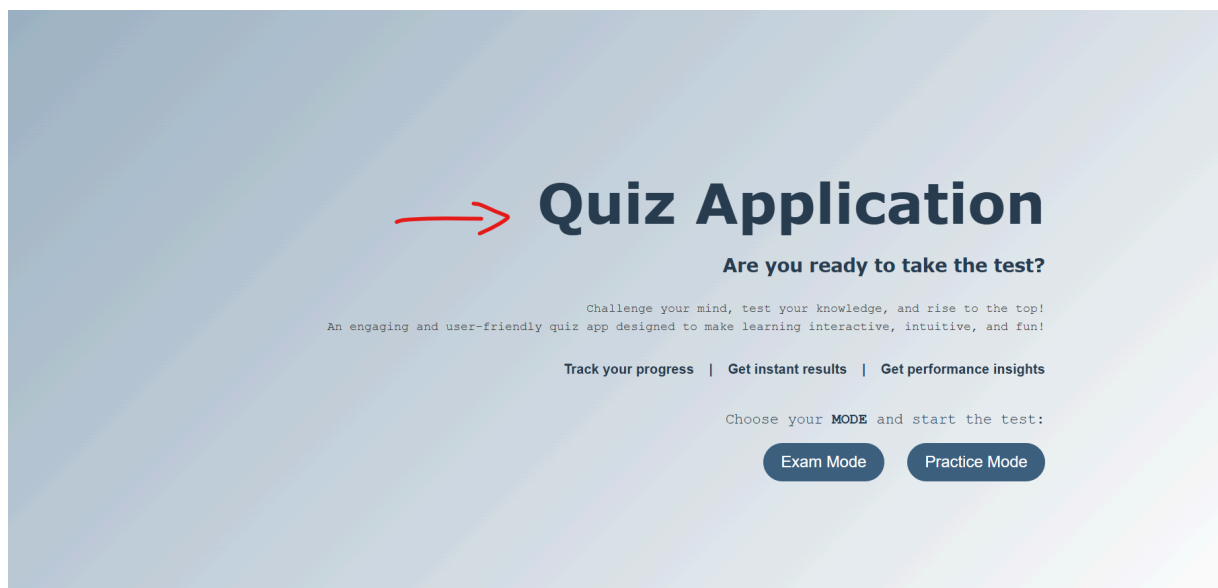
HCI Lab Assignment 2

Application that employs Usability Principles

We made a **Quiz Application** to simulate various Human-Computer Interaction (HCI) and usability principles. The application was built with two modes—Practice Mode (immediate feedback) and Exam Mode (feedback at the end)—to investigate how different feedback timing influences user performance and satisfaction.

1. Primality : The principle of primality refers to designing interfaces that capture the user's attention by emphasizing important elements in the start.

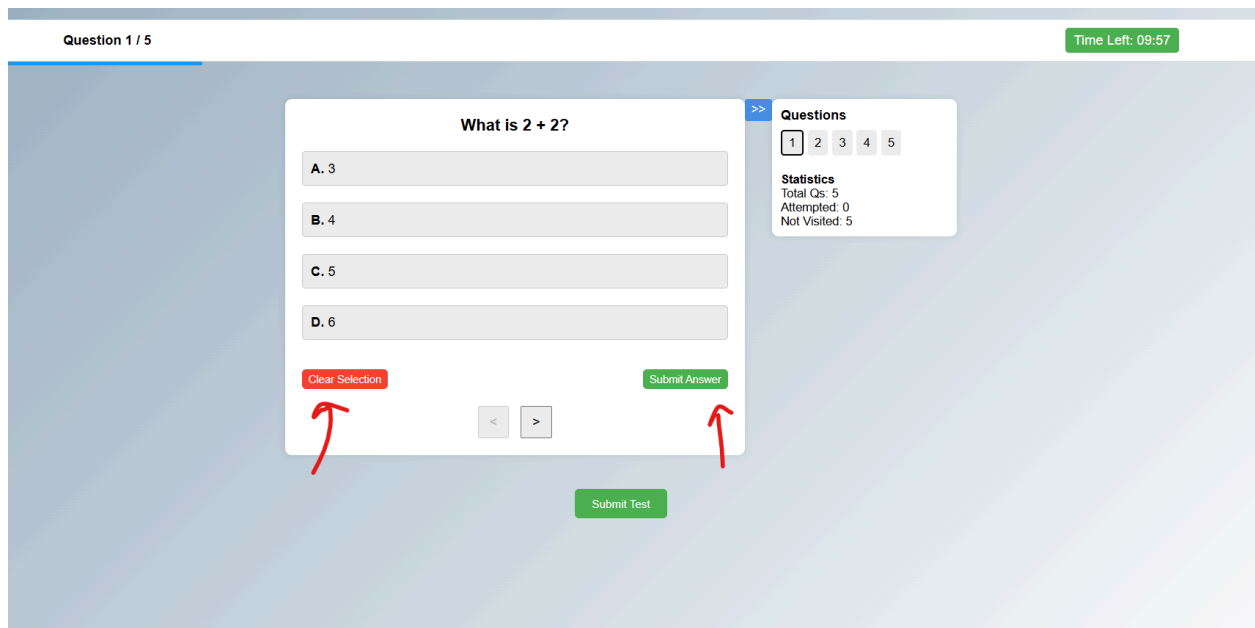
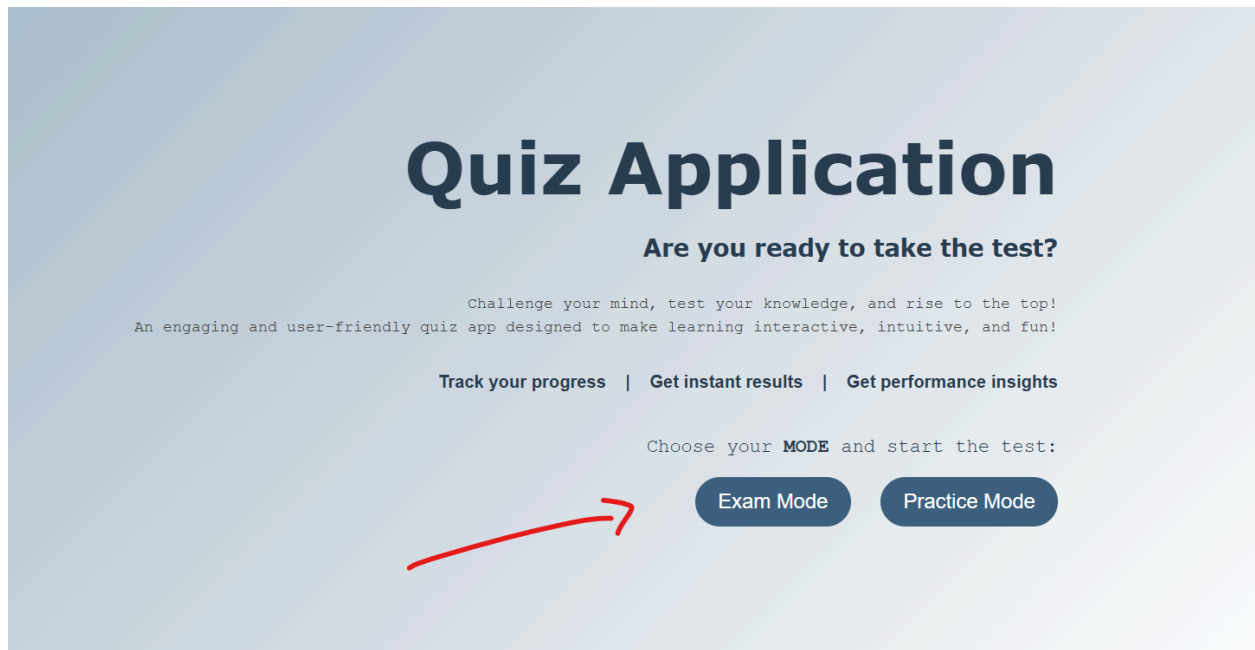
- The **homepage** displays the app's name "Quiz Application" in a large, bold heading, ensuring that users immediately recognize what the website is about.
- The **first message** users see is a motivational prompt: "Are you ready to take the test?", creating a strong impression.



2. Recency : Recency focuses on the idea that users tend to recall the most recent information they have seen.

- **Mode selection buttons** and final call to action "Are you ready to take the test?" clearly describes what the users' next steps are.

- In the quiz interface, the **"Submit Answer"** and **"Clear Selection"** buttons appear towards the end of the quiz card, making sure they are fresh in users' memory when they need them.
- The performance feedback at the end of the homepage reinforces the key benefits of using the app



3. Serial Position Effect : This effect describes how users tend to remember the first and last items in a list better than those in the middle.

- The structured layout of the homepage, where key elements (app name and mode selection) are placed at the top and bottom respectively, making them more memorable.

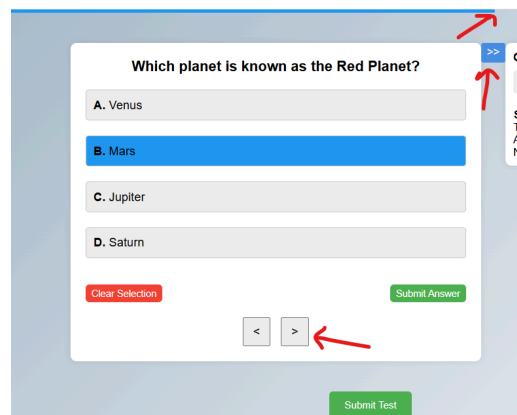
4. Pareto Law (Minimalist Design) : The Pareto law in design emphasizes focusing on the most impactful features that serve the majority of user needs.

- **Minimal Functionality:** The quiz application avoids unnecessary elements. With only essential buttons (e.g., Submit, Clear Selection, Next, Previous), and a few indicators (feedback) ie, Question number, Time left, statistics. A collapsible sidebar menu on the right to further increase focus on the question.
- **Simple Design:** Majority of the home, and quiz interface is just whitespace. Only a small portion of the page, which contains the essential features, is for test taking. This helps the user focus on the task, and provides a distraction free design.

5. Detailed Metrics for Learnability : Learnability is enhanced by providing users with clear, quantifiable feedback on their progress.

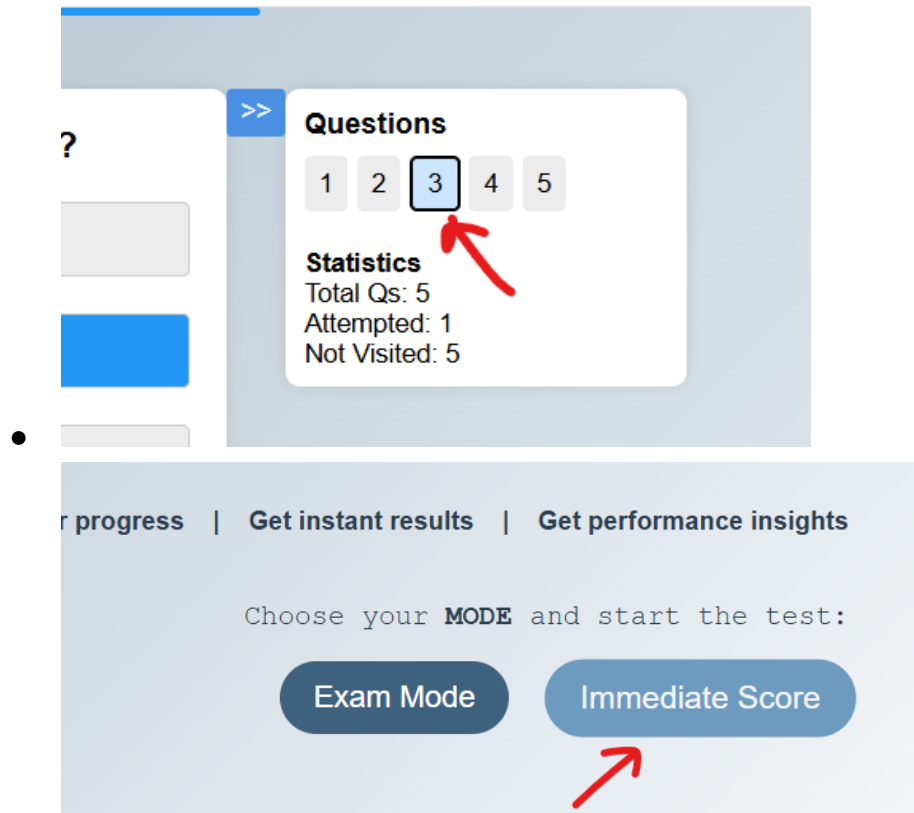
i. Predictability

- **Progress Bar:** The blue progress bar at the top gives users a sense of how far they are in the quiz.
- **Navigation Buttons:** "<", ">", the users can easily guess these buttons are to go to the next/previous question in the test.
- **Mode selection** buttons in a rounded rectangular shaped box can be predicted as buttons.
 - “>>” for the collapsible menu on the right side of the test interface.



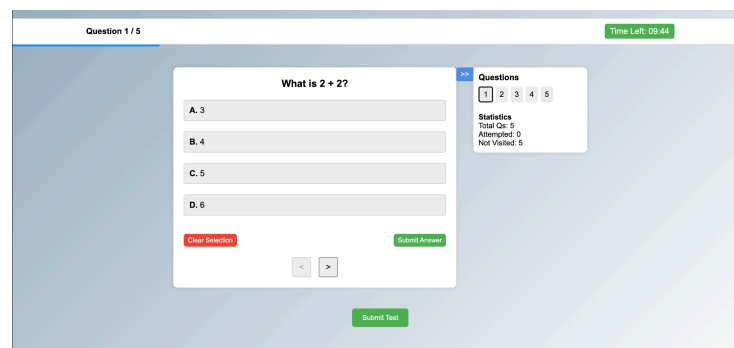
ii. Synthesizability

- **Progress bar** tells them how far they're in the test.
- The **sidebar** highlights the question numbers which have been answered.
- **Statistics** display keeps track of progress.
- The Mode selection button changes to a short description of the current mode you have hovered over.



iii. Familiarity

- **Standard Multiple-Choice Layout:** The question and answer format mirrors widely used test interfaces.
 - Test timer and Question number at the top
 - Submit and clear selection button



You scored 3 out of 5

Click on a question number to review your answer vs. the correct answer:



Question 1: What is 2 + 2?

- A. 3
- B. 4
- C. 5
- D. 6



- **Clear Progress Tracking**

- The visual progress bar lets users see how far along they are in the quiz — reducing uncertainty

Question 1 / 5

iv. Generalizability

- **Two Modes** (Practice & Exam) with a lot of similar features, same colours and UI elements.

v. Consistency

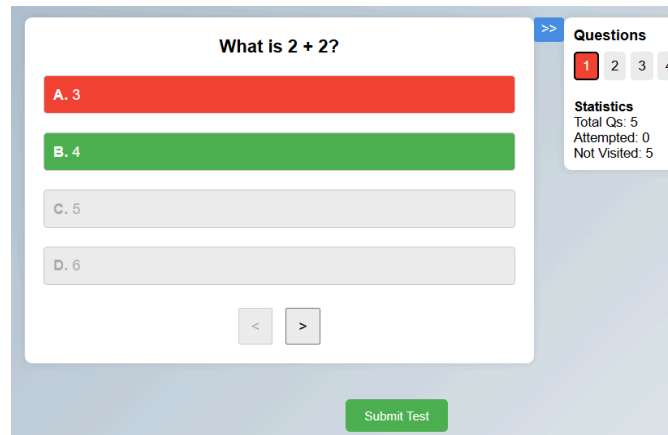
- The **colours of buttons**, Clear selection has red, Submit has green.
- In practice mode, the correctly answered questions are highlighted in green, and wrongly in red, similar to the after test feedback in both test modes.

You scored 3 out of 5

Click on a question number to review your answer vs. the correct answer:



Try Again



Usability Testing

Task Completion Rate : 97% users were able to complete the quiz

Average time per question -

First question : **24 secs**

With repeated exposure (learnability measure): Reduced to around **11 secs** per question.

Error Rate : 1 out of 21 users got confused if their answer was submitted or not

Navigation Efficiency : 89% of the users were able to navigate their way through each question

Overall Satisfaction: **9.1/10**

Visual Feedback (color coding): **8.6/10**

Minimalist Design & Interface Clarity: **8.9/10**

Ease of Learning (Learnability): **9.3/10**

User Feedback :

- Users praised the use of color coding (green for correct, red for wrong, blue for selection) which provided immediate, instinctive feedback.
- Users liked the progress bar which helped them visualise and understand how much of the test is left.
- Many users noted that immediate feedback in the practice mode helped reinforce learning, especially for questions at the beginning and end of the quiz.

- The uncluttered interface was highly appreciated; users felt the design minimized distractions and allowed them to focus on the content.
- The feedback after submitting the test which allows the user to go through their answers and was highly appreciated.