**Activity Diagram Steps**

**Start of the Quiz**

* This is the entry point where the quiz begins.

**Initialize Quiz Variables**

* Set initial values for variables such as questionCounter, score, and populate the availableQuestions array. This step prepares the quiz for the user.

**Display Quiz Interface**

* The quiz interface is displayed to the user, with the initial score element hidden. This sets up the visual elements of the quiz.

**Check for Remaining Questions**

* The system checks if there are any questions left in the availableQuestions array or if the questionCounter has reached the maximum limit. If either condition is met, the quiz ends.
* If the quiz ends, display the final score and redirect the user to the results page.

**Get New Question**

* Increase the questionCounter.
* Update the progress display to reflect the current question number.
* Randomly select a new question from the remaining questions and display it along with the multiple-choice options.

**User Selects an Answer**

* The system waits for the user to select an answer. This is an interactive step where user input is received.

**Evaluate the Selected Answer**

* Once an answer is selected, the system evaluates whether it is correct or incorrect.
* The selected choice is visually marked as correct or incorrect, providing immediate feedback to the user.

**Update Score (if necessary)**

* If the user's answer is correct, the score is incremented.

**Proceed to the Next Question**

* The system removes the visual markings from the previous question and cycles back to step 4, continuing with the next question.

**Timer Countdown**

* Parallel to these steps, a 10-minute countdown timer runs from the start of the quiz.
* The timer is displayed and updated regularly.
* If the timer reaches zero, the quiz is terminated, and the user is redirected to the results page.

**End of the Quiz**

* The quiz process concludes either when all questions are answered, the maximum question limit is reached, or the timer runs out.