

-----CODE4-----

```
import java.util.*;
import java.util.concurrent.*;

public class QuizApplication {

    static class Question {
        String question;
        String[] options;
        String correctAnswer;

        public Question(String question, String[] options, String correctAnswer) {
            this.question = question;
            this.options = options;
            this.correctAnswer = correctAnswer;
        }
    }

    private static List<Question> questions = new ArrayList<>();
    private static int score = 0;
    private static int totalQuestions = 0;

    public static void main(String[] args) {
        // Initialize the questions
        initializeQuestions();

        // Create a Scanner object to take input
        Scanner scanner = new Scanner(System.in);

        // Start the quiz
```

```

for (int i = 0; i < questions.size(); i++) {
    Question currentQuestion = questions.get(i);
    totalQuestions++;
    System.out.println("Question " + (i + 1) + ": " + currentQuestion.question);

    // Display options
    for (int j = 0; j < currentQuestion.options.length; j++) {
        System.out.println((j + 1) + ". " + currentQuestion.options[j]);
    }

    // Start the timer for this question
    boolean answerSubmitted = getAnswerWithinTime(scanner, currentQuestion);

    if (answerSubmitted) {
        System.out.println("Correct Answer: " + currentQuestion.correctAnswer);
    } else {
        System.out.println("Time is up! Correct Answer: " + currentQuestion.correctAnswer);
    }

    System.out.println();
}

// Display final results
System.out.println("Quiz Over!");
System.out.println("Your final score: " + score + "/" + totalQuestions);
scanner.close();
}

private static void initializeQuestions() {
    questions.add(new Question("What is the capital of France?",
        new String[]{"Berlin", "Madrid", "Paris", "Rome"}, "Paris"));
}

```

```
questions.add(new Question("Which programming language is known as the language of the web?",
```

```
    new String[]{"Java", "Python", "JavaScript", "C++", "JavaScript"});
```

```
questions.add(new Question("Who developed the theory of relativity?",
```

```
    new String[]{"Newton", "Einstein", "Tesla", "Galileo", "Einstein"});
```

```
questions.add(new Question("What is the largest planet in our solar system?",
```

```
    new String[]{"Earth", "Mars", "Jupiter", "Saturn", "Jupiter"});
```

```
questions.add(new Question("Which year did the Titanic sink?",
```

```
    new String[]{"1900", "1912", "1920", "1930", "1912"});
```

```
}
```

```
private static boolean getAnswerWithinTime(Scanner scanner, Question question) {
```

```
    ExecutorService executor = Executors.newSingleThreadExecutor();
```

```
    Future<String> future = executor.submit(() -> {
```

```
        System.out.print("Select an option (1-4): ");
```

```
        int selectedOption = scanner.nextInt();
```

```
        if (selectedOption >= 1 && selectedOption <= 4) {
```

```
            return question.options[selectedOption - 1];
```

```
        } else {
```

```
            return "";
```

```
        }
```

```
    });
```

```
try {
```

```
    // Set a time limit of 10 seconds for answering the question
```

```
    String userAnswer = future.get(10, TimeUnit.SECONDS);
```

```
    if (userAnswer.equals(question.correctAnswer)) {
```

```
        score++;
```

```
    }
```

```
    return !userAnswer.isEmpty(); // returns true if the answer is submitted within time
```

```
} catch (TimeoutException e) {
```

```
        System.out.println("Time is up! Moving to next question.");  
        return false; // If time is up, move to the next question  
    } catch (InterruptedException | ExecutionException e) {  
        e.printStackTrace();  
        return false;  
    } finally {  
        executor.shutdownNow();  
    }  
}  
}
```