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import java.util.Scanner;

public class QuizGame {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        int score = 0; // To track the number of correct answers

        System.out.println("Welcome to the Java Quiz Game!\n");

        // Array to store questions
        String[][] questions = {
            {"What is the capital of France?", "A. Berlin", "B. Madrid",
"C. Paris", "D. Rome", "C"},
            {"Which programming language is used for Android development?",
"A. Python", "B. Java", "C. C++", "D. Swift", "B"},
            {"What is 5 + 3?", "A. 6", "B. 8", "C. 9", "D. 10", "B"},
            {"Which data type is used to store true or false values in
Java?", "A. int", "B. boolean", "C. char", "D. float", "B"},
            {"What does HTML stand for?", "A. Hyper Transfer Markup
Language", "B. High Tech Modern Language", "C. Hyper Text Markup
Language", "D. Home Tool Markup Language", "C"}
        };

        // Loop through each question
        for (int i = 0; i < questions.length; i++) {
            System.out.println("Question " + (i + 1) + ": " +
questions[i][0]);
            for (int j = 1; j <= 4; j++) {
                System.out.println(questions[i][j]);
            }

            System.out.print("Enter your answer (A, B, C, or D): ");
            String answer = scanner.next().toUpperCase();

            // Input validation
            while (!answer.matches("[ABCD]")) {
                System.out.print("Invalid input. Please enter A, B, C, or
D: ");
                answer = scanner.next().toUpperCase();
            }
        }
    }
}

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        // Check the answer
        if (answer.equals(questions[i][5])) {
            System.out.println("Correct!\n");
            score++;
        } else {
            System.out.println("Wrong! The correct answer was: " +
questions[i][5] + "\n");
        }
    }

    // Calculate the final score
    double percentage = ((double) score / questions.length) * 100;
    System.out.println("Quiz Over!\nYour final score: " + score + "/" +
questions.length);
    System.out.printf("Your score percentage: %.2f%%\n", percentage);

    scanner.close();
}
}

```

Explanation of the Code:

1. **Scanner for Input:** We use **Scanner** to read user input.
2. **Array for Questions:** A 2D array stores questions, options, and correct answers.
3. **Looping through Questions:** The **for** loop iterates through each question, printing options and capturing user input.
4. **Input Validation:** Ensures the user enters only **A, B, C, or D**.
5. **Checking Answers:** Compares user input with the correct answer.
6. **Scoring System:** Keeps track of correct answers and calculates the final percentage.
7. **Formatted Output:** Displays the user's final score and percentage.

Welcome to the Java Quiz Game!

Question 1: What is the capital of France?

- A. Berlin
- B. Madrid
- C. Paris
- D. Rome

Enter your answer (A, B, C, or D): c

Correct!

Question 2: Which programming language is used for Android development?

- A. Python
- B. Java
- C. C++
- D. Swift

Enter your answer (A, B, C, or D): b

Correct!

Question 3: What is 5 + 3?

- A. 6
- B. 8
- C. 9
- D. 10

Enter your answer (A, B, C, or D): t

Invalid input. Please enter A, B, C, or D: b

Correct!

Question 4: Which data type is used to store true or false values in Java?

- A. int
- B. boolean
- C. char
- D. float

Enter your answer (A, B, C, or D): a

Wrong! The correct answer was: B

Question 5: What does HTML stand for?

- A. Hyper Transfer Markup Language
- B. High Tech Modern Language
- C. Hyper Text Markup Language
- D. Home Tool Markup Language

Enter your answer (A, B, C, or D): a

Wrong! The correct answer was: C

Quiz Over!

Your final score: 3/5

Your score percentage: 60.00%