**Code(program):**

**import java.util.ArrayList;**

**import java.util.Scanner;**

**// Class representing a quiz question**

**class Question {**

**private String questionText;**

**private String[] options;**

**private int correctAnswer;**

**public Question(String questionText, String[] options, int correctAnswer) {**

**this.questionText = questionText;**

**this.options = options;**

**this.correctAnswer = correctAnswer;**

**}**

**public String getQuestionText() {**

**return questionText;**

**}**

**public String[] getOptions() {**

**return options;**

**}**

**public int getCorrectAnswer() {**

**return correctAnswer;**

**}**

**}**

**// Class managing a collection of quiz questions**

**class Quiz {**

**private ArrayList<Question> questions;**

**public Quiz() {**

**questions = new ArrayList<>();**

**}**

**public void addQuestion(Question question) {**

**questions.add(question);**

**}**

**public Question getQuestion(int index) {**

**return questions.get(index);**

**}**

**public int getNumberOfQuestions() {**

**return questions.size();**

**}**

**}**

**// Main class for user interface and quiz interaction**

**public class QuizApp {**

**private static Scanner scanner = new Scanner(System.in);**

**public static void main(String[] args) {**

**Quiz quiz = new Quiz();**

**// Adding sample questions to the quiz**

**quiz.addQuestion(new Question("What is the capital of France?",**

**new String[]{"1. Paris", "2. London", "3. Berlin", "4. Madrid"}, 1));**

**quiz.addQuestion(new Question("What is 2 + 2?",**

**new String[]{"1. 3", "2. 4", "3. 5", "4. 6"}, 2));**

**quiz.addQuestion(new Question("What is the largest planet in our solar system?",**

**new String[]{"1. Earth", "2. Mars", "3. Jupiter", "4. Saturn"}, 3));**

**int score = 0;**

**for (int i = 0; i < quiz.getNumberOfQuestions(); i++) {**

**Question question = quiz.getQuestion(i);**

**System.out.println(question.getQuestionText());**

**for (String option : question.getOptions()) {**

**System.out.println(option);**

**}**

**int userAnswer = getUserInput();**

**if (userAnswer == question.getCorrectAnswer()) {**

**score++;**

**}**

**}**

**System.out.println("Your score: " + score + "/" + quiz.getNumberOfQuestions());**

**}**

**private static int getUserInput() {**

**int input = -1;**

**while (input < 1 || input > 4) {**

**System.out.print("Enter your answer (1-4): ");**

**if (scanner.hasNextInt()) {**

**input = scanner.nextInt();**

**} else {**

**scanner.next(); // Clear invalid input**

**System.out.println("Invalid input. Please enter a number between 1 and 4.");**

**}**

**}**

**return input;**

**}**

**}**

**Explanation:**

1. **Question Class:**
   * This class encapsulates a quiz question's text, options, and the correct answer's index.
2. **Quiz Class:**
   * This class manages a collection of Question objects.
   * It provides methods to add questions and retrieve questions and the total number of questions.
3. **QuizApp Class:**
   * This is the main class for interacting with the user.
   * It creates a Quiz object, adds sample questions, and handles user interaction.
   * It presents each question to the user, validates their input, and calculates the final score.

**Key Points:**

* **Validation of User Input:**
  + Ensures that the user inputs a valid option (an integer between 1 and 4).
  + Uses a while loop and scanner.hasNextInt() to check for valid input.
* **User Interface:**
  + The quiz is presented in the console.
  + The user's responses are captured and validated, and the score is displayed at the end.