

A Project report on
CONSOLE BASED QUIZ APPLICATION

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MODULE 1

Overview & Purpose

This project is a **console-based quiz game application developed in Java**, designed to test a player's general knowledge through an interactive and engaging interface. The game presents the user with **10 multiple-choice questions**, each with four answer options, and integrates classic game show features such as **lifelines, prize tracking, and dynamic game progression** based on the player's inputs.

MODULE 2

System Requirements

Hardware:

- Processor: Dual-core 2.0 GHz or higher
- RAM: 2 GB minimum
- Storage: 50 MB

Software:

- Java Development Kit (JDK) 8 or higher
- Java-supported IDE (IntelliJ, Eclipse, or VS Code)
- Operating System: Windows / Linux / macOS
- Console or Terminal access for input/output

MODULE 3

Applicational Area

- **Educational Quizzes:** Test and reinforce academic concepts through interactive learning.
- **Competitive Exam Practice:** Simulate real-time exam environments for effective preparation.
- **Learning Management Systems:** Integrate quizzes to track and evaluate learner progress.
- **Fun and Entertainment:** Enjoy trivia-based games for leisure and mental stimulation.
- **Interview Preps (Trivia Quizzes):** Boost skills with quick quiz rounds.

MODULE 4

Technology Description

Programming Language: Java

Concepts Used:

- Object-Oriented Programming (OOP)
- Classes and Objects (Player, Game)
- Input Handling (Scanner)
- Arrays and Collections (String[], ArrayList)
- Conditional logic and lifeline management
- Exception Handling (try-catch for input validation)

MODULE 5

UML & Flow Diagram

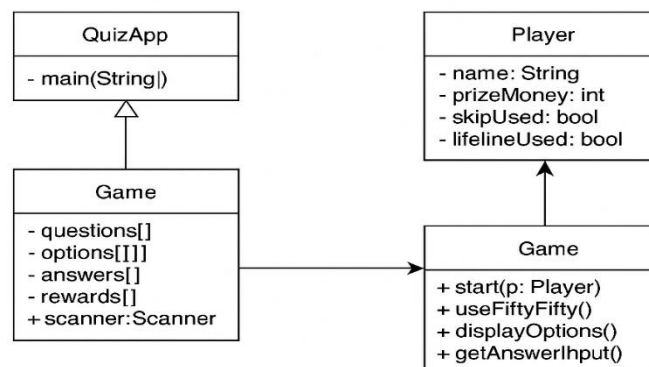


Fig 5.1 Project UML Diagram

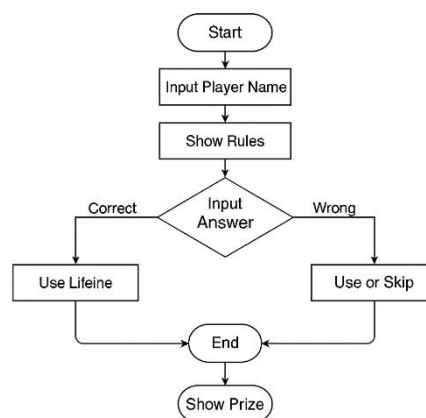


Fig 5.2 Project Flow Diagram

MODULE 6

Source Code

7.1 QuizApp.java

```
import java.util.Scanner;

public class QuizApp {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("*****" + " welcome to QuizGame"+"*****");
        System.out.print("Enter player name: ");
        String name = sc.nextLine();

        Player player = new Player(name);
        Game game = new Game();
        game.start(player);
    }
}
```

7.2 Player.java

```
import java.util.*;

class Player {
    String name;
    int prizeMoney = 0;
    boolean skipUsed = false;
    boolean lifelineUsed = false;

    Player(String name) {
        this.name = name;
    }
}
```

7.3 Game.java

```
class Game {
    Scanner sc = new Scanner(System.in);

    String[] questions = {
        "what is the capital of India?",
        "which planet is known as the Red Planet?",
        "who is our prime minister?",
        "who is father of the Nation?",
        "who lift the world cup in 2011?",
        "who is the captain of 2011 worldcup Indian team?",
        "what is the nick name of virat kohli?",
        "who starts the Being human Brand in India?",
        "which ipl teams are having most IPL titles?",
        "what is national bird of India?"
    };

    String[][] options = {
        {"1. New Delhi", "2. Agra", "3. Bengaluru", "4. Mumbai"},
        {"1. Venus", "2. Mars", "3. Jupiter", "4. Saturn"},
        {"1. Narendra modi", "2. Nehru", "3. Rahul gandhi", "4. Ysr"},
    };
}
```

```

        {"1. Mahatma Gandhi", "2. Nehru", "3. sonia gandhi", "4.Narendra modi"},
        {"1. Newzeland", "2. Australia", "3. England", "4. India"},
        {"1. Rohit sharma", "2. ViratKohli", "3. MS Dhoni", "4. Kapildev"},
        {"1. chikku", "2. Nehru", "3. Runmachine", "4. Chokli"},
        {"1. Salim Khan", "2. Chiranjeevi", "3. Salman khan", "4. Alia Batt"},
        {"1. CSK&RCB", "2. CSK&MI", "3. DELHI&MI", "4. RCB&LSG"},
        {"1. Peacock", "2. Tiger", "3. kiwi", "4. eagle"}
    };

    int[] answers = {1, 2, 1, 1, 4, 3, 1, 3, 2, 1};
    int[] rewards = {1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000};

    void start(Player p) {
        System.out.println("\nWelcome " + p.name + " to the Quiz Game!");
        System.out.println("-----Rules:-----");
        System.out.println("|1. Each correct answer adds money.");
        System.out.println("|2. You can skip ONE question.");
        System.out.println("|3. You have 30 seconds to answer each question.");
        System.out.println("|4. You can use only one 50-50 lifeline.");
        System.out.println("|5. If you give an incorrect answer, it will quit the game.");
        System.out.println("|6. You can quit anytime and keep your prize money.");
        System.out.println("|Are you Ready? (yes/no)");
        System.out.println("-----All the Best-----");

        String ready = sc.next();
        if (!ready.equalsIgnoreCase("yes")) {
            System.out.println("Game exited.");
            return;
        }

        for (int i = 0; i < questions.length; i++) {
            System.out.println("\nQuestion " + (i + 1) + ": " + questions[i]);
            displayOptions(i);
            int choice = getAnswerInput();

            if (choice == -1) {
                System.out.println("Invalid input. Final prize: " + p.prizeMoney);
                return;
            }

            if (choice >= 1 && choice <= 4) {
                if (choice == answers[i]) {
                    p.prizeMoney += rewards[i];
                    System.out.println("Correct! Total prize: " + p.prizeMoney);
                } else {
                    System.out.println("Wrong! Final prize: " + p.prizeMoney);
                    return;
                }
            } else if (choice == 5) {
                System.out.println("Choose Lifeline:");
            }
        }
    }

```

```
        if (!p.lifelineUsed) {
            System.out.println("1. 50-50 Lifeline");
        } else {
            System.out.println("1. 50-50 Lifeline (Used)");
        }

        if (!p.skipUsed) {
            System.out.println("2. Skip Question");
        } else {
            System.out.println("2. Skip Question (Used)");
        }

        int lifelineChoice = getAnswerInput();
        if (lifelineChoice == 1) {
            if (!p.lifelineUsed) {
                p.lifelineUsed = true;
                useFiftyFifty(i);
                i--; // re-ask the question
            } else {
                System.out.println("50-50 already used.");
                i--;
            }
        } else if (lifelineChoice == 2) {
            if (!p.skipUsed) {
                p.skipUsed = true;
                System.out.println("Question skipped.");
                continue; // skip to next question
            } else {
                System.out.println("Skip already used.");
                i--;
            }
        } else {
            System.out.println("Invalid lifeline choice.");
            i--;
        }
    } else if (choice == 7) {
        System.out.println("You chose to quit. Final prize: " +
p.prizeMoney);
        return;
    } else {
        System.out.println("Invalid choice. Try again.");
        i--;
    }
}

    System.out.println("Congratulations " + p.name + "! You won ₹" +
p.prizeMoney);
}

    void displayOptions(int qIndex) {
        for (int i = 0; i < 4; i++) {
            System.out.println(options[qIndex][i]);
        }
        System.out.println("5. Use Lifeline");
        System.out.println("6. Quit the Game");
    }

    void useFiftyFifty(int questionIndex) {
        int correct = answers[questionIndex];
```

```

        List<Integer> wrongs = new ArrayList<>();
        for (int i = 1; i <= 4; i++) {
            if (i != correct) wrongs.add(i);
        }
        Collections.shuffle(wrongs);
        int wrongToKeep = wrongs.get(0);

        System.out.println("Remaining options:");
        System.out.println(options[questionIndex][correct - 1]);
        System.out.println(options[questionIndex][wrongToKeep - 1]);
    }

    int getAnswerInput() {
        try {
            System.out.print("You have 30 seconds. Enter your choice: ");
            return sc.nextInt();
        } catch (Exception e) {
            sc.next(); // consume invalid input
            return -1;
        }
    }
}

```

Already provided and contains 3 main components:

- QuizApp: Entry point for the application.
- Player: Maintains player-specific data.
- Game: Core logic of the quiz with lifeline features.

Key Features Implemented:

- 50-50 Lifeline (removes two wrong options)
- Skip question lifeline
- Quit option
- Prize tracking
- 30-second timer prompt (simulated)

MODULE 7

Output Screenshots

```

***** welcome to QuizGame*****
Enter player name: mansoor

Welcome mansoor to the Quiz Game!

-----Rules:-----
1. Each correct answer adds money.
2. You can skip ONE question.
3. You have 30 seconds to answer each question.
4. You can use only one 50-50 lifeline.
5. If you give an incorrect answer, it will quit the game.
6. You can quit anytime and keep your prize money.
Are you Ready? (yes/no)
-----All the Best-----

```

Fig 7.1 Rules of the Game


```
***** welcome to QuizGame*****
Enter player name: mansoor

Welcome mansoor to the Quiz Game!
-----Rules:-----
1. Each correct answer adds money.
2. You can skip ONE question.
3. You have 30 seconds to answer each question.
4. You can use only one 50-50 lifeline.
5. If you give an incorrect answer, it will quit the game.
6. You can quit anytime and keep your prize money.
Are you Ready? (yes/no)
-----All the Best-----
no
Game exited.
```

Fig 7.2 User is not Ready

```
Question 1: what is the capital of India?
1. New Delhi
2. Agra
3. Bengaluru
4. Mumbai
5. Use Lifeline
6. Quit the Game
You have 30 seconds. Enter your choice: 1
Correct! Total prize: 1000
```

Fig 7.3 Correct Answer

```
Question 3: who is our prime minister?
1. Narendra modi
2. Nehru
3. Rahul gandhi
4. Ysr
5. Use Lifeline
6. Quit the Game
You have 30 seconds. Enter your choice: 5
Choose Lifeline:
1. 50-50 Lifeline
2. Skip Question
You have 30 seconds. Enter your choice: 1
Remaining options:
1. Narendra modi
2. Nehru

Question 3: who is our prime minister?
1. Narendra modi
2. Nehru
3. Rahul gandhi
4. Ysr
5. Use Lifeline
6. Quit the Game
You have 30 seconds. Enter your choice:
```

Fig 7.4 Lifeline 1 (50-50) Usage

```
Question 4: who is father of the Nation?
1. Mahatma Gandhi
2. Nehru
3. sonia gandhi
4.Narendra modi
5. Use Lifeline
6. Quit the Game
You have 30 seconds. Enter your choice: 5
Choose Lifeline:
1. 50-50 Lifeline (Used)
2. Skip Question
You have 30 seconds. Enter your choice:
```

Fig 7.5 Lifeline 1 (50-50) Used Already

```
Question 4: who is father of the Nation?
1. Mahatma Gandhi
2. Nehru
3. sonia gandhi
4.Narendra modi
5. Use Lifeline
6. Quit the Game
You have 30 seconds. Enter your choice: 5
Choose Lifeline:
1. 50-50 Lifeline (Used)
2. Skip Question
You have 30 seconds. Enter your choice: 2
Question skipped.

Question 5: who lift the world cup in 2011?
1. Newzeland
2. Australia
3. England
4. India
5. Use Lifeline
6. Quit the Game
You have 30 seconds. Enter your choice:
```

Fig 7.6 Lifeline 2 (Skip) Usage

```
Question 5: who lift the world cup in 2011?
1. Newzeland
2. Australia
3. England
4. India
5. Use Lifeline
6. Quit the Game
You have 30 seconds. Enter your choice: 5
Choose Lifeline:
1. 50-50 Lifeline (Used)
2. Skip Question (Used)
You have 30 seconds. Enter your choice:
```

Fig 7.8 Lifeline 2 (Skip) Used Already

```
Question 5: who lift the world cup in 2011?
1. Newzeland
2. Australia
3. England
4. India
5. Use Lifeline
6. Quit the Game
You have 30 seconds. Enter your choice: 1
Wrong! Final prize: 3000
```

Fig 7.9 Lifelines Completed and Wrong Answer

```
Question 1: what is the capital of India?
1. New Delhi
2. Agra
3. Bengaluru
4. Mumbai
5. Use Lifeline
6. Quit the Game
You have 30 seconds. Enter your choice: 6
You chose to quit. Final prize: 0
```

Fig 7.10 Quit in the Middle of the Game

```
Question 10: what is national bird of India?
1. Peacock
2. Tiger
3. kiwi
4. eagle
5. Use Lifeline
6. Quit the Game
You have 30 seconds. Enter your choice: 1
Correct! Total prize: 10000
Congratulations mansoor! You won ₹10000
```

Fig 7.11 Successful Completion of Game

MODULE 8

Conclusion and References

This console-based quiz game serves as a practical demonstration of building an interactive, real-time Java application using object-oriented programming and fundamental concepts like control flow, arrays, and exception handling. The project integrates features such as lifelines, score tracking, and a quit option, enhancing user engagement and simulating real quiz scenarios.

By incorporating **modular class design**, the codebase remains clean, reusable, and easy to maintain. The addition of **multithreading** introduces timing mechanisms, laying the groundwork for more dynamic applications.

With potential for future upgrades like a **GUI (JavaFX/Swing)**, **question banks**, and **leaderboard systems**, this project is an excellent foundation for learners aiming to master Java through hands-on experience.

Ideal for educational use, interview prep, or personal development, it highlights both the versatility and power of core Java.

References:

- GeeksforGeeks – Java Programming Language.
- G-TEC JAINx Class notes for Concept clarification.
- W3Schools Java Tutorial

Github Link: <https://github.com/MOHAMMAD-MANSOOR-K>