



**Programming in C – Project**

**Project Title : Quiz Game**

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# **1. Abstract**

This project presents a simple Quiz Game application written in the C programming language.

The game asks five multiple-choice questions, accepts user input, validates answers, and computes the final score. The purpose of the project is to demonstrate control structures, character handling, conditional statements, and interactive console-based programming in C. The report covers the problem definition, system design, implementation details, testing, results, and future enhancements.

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## **2. Problem Definition**

The objective of this project is to build a basic multiple-choice quiz game that:

1. Displays a set of five questions to the user
2. Accepts input from the user for each question
3. Converts input into uppercase for uniform comparison
4. Checks whether the answer is correct or wrong
5. Maintains and displays the final score
6. Generates feedback based on the total score

The game should run in the command-line terminal using only standard C libraries.

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## 3. System Design

### 3.1 System Overview

The system runs sequentially:

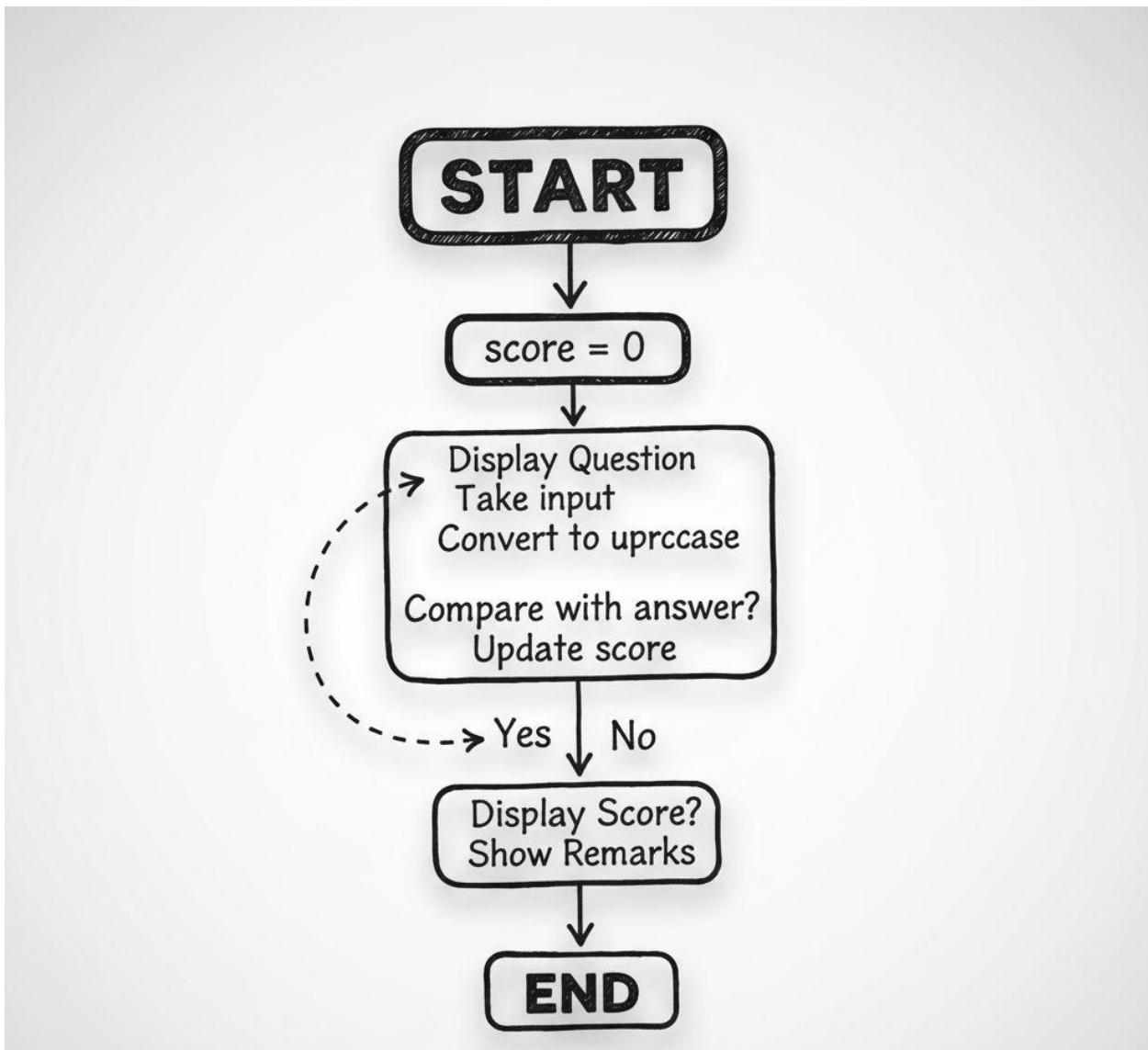
- Display question
  - Show four options
  - Accept user input
  - Validate using `toupper()`
  - Compare with correct answer
  - Update score
- 

### 3.2 Algorithm

**Algorithm: Quiz Game**

1. Initialize score = 0
  2. For each of the 5 questions:
    - a. Display the question
    - b. Take input
    - c. Convert input to uppercase
    - d. If equal to correct option → score++
  3. After all questions:
    - a. Display score
    - b. Show performance message
-

### 3.3 Flowchart



## 4. Implementation Details

### 4.1 Tools and Libraries Used

- **Compiler:** GCC
  - **IDE:** VS Code
  - **Standard Libraries:**
    - stdio.h – Input/Output
    - ctype.h – Character manipulation (toupper)
- 

### 4.2 Explanation of Major Code Components

#### Input Handling

```
scanf(" %c", &userAnswer1);
userAnswer1 = toupper(userAnswer1);
```

#### Answer Checking

```
if (userAnswer1 == answer1) {
    printf("Correct!\n");
    score++;
} else {
    printf("Wrong!\n");
}
```

#### Final Feedback

```
if (score == 5) {
    printf("Excellent! Perfect score!\n");
}
```

## 5. Testing & Results

### 5.1 Test Cases

Test Case	Input	Expected Output
Valid Option	A/B/C/D	Correct or Wrong
Lowercase Input	a/b/c/d	Accepted after uppercase conversion
Invalid Char	X	Treated as wrong
All Correct	B B A C A	Score = 5

Test Case	Input	Expected Output
All Incorrect	D D D D D	Score = 0

---

## 5.2 Sample Output

```
welcome to the quiz game!
Question 1: What is the capital of france?
A) Madrid
B) Paris
C) Rome
D) Berlin
Your answer: B
Correct!
...
your score: 4 out of 5
Good job! but you can improve.
```

# 6. Conclusion & Future Work

## Conclusion

The Quiz Game successfully demonstrates conditional statements, input handling, character functions, and basic interactive programming in C. It gives correct output, handles user input, and evaluates performance.

## Future Enhancements

- Add file handling to load questions dynamically
  - Add difficulty levels
  - Add randomized question selection
  - Add scoring history stored in files
  - Add menus and categories
- 

# 7. References

1. Yashavant Kanetkar – *Let Us C*
2. GeeksforGeeks – C Programming
3. TutorialsPoint – C Programming Basics
4. Course notes

## 8. Appendix — Full Source Code

```
1 > #include <stdio.h> ...
3
4 int main() {
5     int score=0;
6
7     printf("welcome to the quiz game!\n");
8     printf("Question 1: What is the capital of france?\n");
9     printf("(A) Madrid\n(B) Paris\n(C) Rome\n(D) Berlin\n");
10    char answer1 = 'B';
11
12    printf("Your answer: ");
13    char userAnswer1;
14    scanf(" %c", &userAnswer1);
15    userAnswer1 = toupper(userAnswer1);
16
17    if (userAnswer1 == answer1) {
18        printf("Correct!\n");
19        score++;
20    } else {
21        printf("Wrong!\n");
22    }
23
24    printf("Question 2: What is the chemical element with the symbol fe?\n");
25    printf("(A) Magnesium\n(B) Iron\n(C) Copper\n(D) Aluminium\n");
26    char answer2 = 'B';
27
28    printf("Your answer: ");
29    scanf(" %c", &userAnswer1);
30    userAnswer1 = toupper(userAnswer1);
31    if (userAnswer1 == answer2) {
32        printf("Correct!\n");
33        score++;
34    } else {
35        printf("Wrong!\n");
36    }
37
38    printf("Question 3: Which planet is known as the red planet?\n");
39    printf("(A) Mars\n(B) Moon\n(C) Earth\n(D) Neptune\n");
40    char answer3 = 'A';
41
42    printf("Your answer: ");
43    scanf(" %c", &userAnswer1);
```

```
PROJECT.c > ...
4 int main() {
44     userAnswer1 = toupper(userAnswer1);
45
46     if (userAnswer1 == answer3) {
47         printf("Correct!\n");
48         score++;
49     } else {
50         printf("Wrong!\n");
51     }
52
53     printf("Question 4:what is the largest mammal in the world?\n");
54     printf("(A) Dolphin\n(B) Shark\n(C) Blue whale\n(D) goldfish\n");
55     char answer4 = 'C';
56
57     printf("Your answer: ");
58     scanf(" %c", &userAnswer1);
59     userAnswer1 = toupper(userAnswer1);
60
61     if (userAnswer1 == answer4) {
62         printf("Correct!\n");
63         score++;
64     } else {
65         printf("Wrong!\n");
66     }
67
68     printf("Question 5: What is the largest ocean on earth?\n");
69     printf("(A) Pacific ocean\n(B) Atlantic ocean\n(C) Arctic ocean\n(D) Southern ocean\n");
70     char answer5 = 'A';
71
72     printf("Your answer: ");
73     scanf(" %c", &userAnswer1);
74     userAnswer1 = toupper(userAnswer1);
75
76     if (userAnswer1 == answer5) {
77         printf("Correct!\n");
78         score++;
79     } else {
80         printf("Wrong!\n");
81     }
82
83     printf("your score: %d out of 5\n", score);
84
85     printf("your score: %d out of 5\n");
86
87     if (score == 5) {
88         printf("Excellent!Perfect score!\n");
89     }
90     else if (score >= 3) {
91         printf("Good job! but you can improve.\n");
92     }
93     else if (score >= 1) {
94         printf("You got some answers right. Keep practicing!\n");
95     }
96     else {
97         printf("Don't worry! Try again and you'll get better!\n");
98     }
99 }
100
101
```