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PROJECT REPORT

On

"Quiz Game"

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Contents

1. <u>Introduction:</u>

The quiz game project presented in this report aims to provide an engaging platform for users to test their knowledge across various topics. Implemented in the C programming language, the quiz game offers a text-based interface where users can interactively answer questions.

The primary objective of this project is to create an entertaining and educational experience for users while demonstrating proficiency in programming logic, particularly through the use of 'switch' and 'if else' statements. By designing a quiz game, we aim to reinforce concepts of conditional statements, user input handling, and basic control flow within the context of a fun and interactive application.

Throughout this report, we will delve into the implementation details, functionality, user experience, results, and conclusions of the quiz game project. Additionally, we will explore potential avenues for future enhancements and improvements to further enrich the user experience and expand the capabilities of the application.

<div align="center">

Advantages of this Activity

</div>

- ### *Interactive Learning Experience:*

The quiz game provides an interactive learning experience where participants actively engage with the content, fostering deeper understanding and retention of knowledge.

- ### *Engagement and Motivation:*

The gamified nature of the quiz game, with its scoring system and potential for competition, motivates participants to actively participate and strive for higher scores

- ### *Customization and Adaptability:*

The quiz game code can be easily customized to include questions on various topics, making it adaptable to different learning objectives and target audiences**.**

- ### *Skill Development:*

The quiz game activity helps develop essential skills such as problem-solving, critical thinking, and decision-making, as participants must analyze questions and select the correct answers.

- ### *Error Solving:*

The quiz game code activity provides participants with opportunities to develop problem-solving skills through the process of identifying and resolving errors within the code. By encountering errors such as syntax mistakes, logical flaws, or unexpected behavior, participants engage in active problem-solving to diagnose the root causes of the issues and implement effective solutions.

- ## *Educational Value:*

By presenting questions on diverse topics and providing informative feedback, the quiz game activity contributes to the acquisition of general knowledge and promotes continuous learning.

- ## *Fun and Enjoyment:*

Ultimately, the quiz game activity offers a fun and enjoyable way for participants to test their knowledge, learn new facts, and engage in a stimulating educational experience.

2. Implementation Details:

Program Structure:

The quiz game is implemented using Case control statement and conditional statements in C to create a structured and efficient program.

a) **Case control statement:** Switch statement

Syntax:

```
switch (expression) {
    case constant1:
        // Statements to execute if expression equals constant1
        break;
    case constant2:
        // Statements to execute if expression equals constant2
        break;
    // Add more case statements as needed
    default:
        // Statements to execute if expression does not match any case constant
}
```

- ✦ The 'switch' statement evaluates the 'expression' and then compares it to each 'case' constant.
- ✦ If the value of the expression matches a 'case' constant, the corresponding block of code following that 'case' label is executed.
- ✦ The 'break' statement is used to terminate the 'switch' block. Without it, execution will "fall through" to the next 'case' block.
- ✦ If no 'case' constant matches the value of the 'expression', the 'default' block is executed (if present). This is optional.

✦ The 'default' case serves as a catch-all for values not explicitly handled by preceding 'case' labels. It is often used for error handling or providing a default behavior.

b) Conditional statements: if-else-if

Syntax:

```
1 ⊟ if (condition1) {
2       // Statements to execute if condition1 is true
3 └ }
4 ⊟ else if (condition2) {
5       // Statements to execute if condition1 is false and condition2 is true
6 └ }
7 ⊟ else {
8       // Statements to execute if both condition1 and condition2 are false
9 └ }
```

✦ The 'if' statement evaluates the condition enclosed within parentheses. If the condition is true, the statements within the corresponding block are executed.

✦ If the condition in the 'if' statement is false, the program evaluates the next 'else if' condition. If this condition is true, the statements within its corresponding block are executed.

✦ This process continues until either one of the conditions is true, or if none of the conditions are true, in which case the statements within the 'else' block (if present) are executed.

✦ Each 'else if' statement allows for the evaluation of additional conditions, providing a series of conditional branches to direct the program flow.

3. Source code:

```
#include<stdio.h>
int main()
{
    char sym;
    int a;
    printf("Welcome to the Quiz Game:\nAre you ready to play the game (type '+'for Yes or '-'for No)\n");
    scanf("%c",&sym);
    switch(sym)
    {
        case'+':
```

```c
scanf("%d",&a);
        if(a==1){
                printf("Correct Answer\n");
        }
        else if(a==2||a==3){
                printf("Wrong answer\n");
                break;
        }
        else{
                printf("Choose appropriate option\n Quiz Terminated\n");
                break;
        }

        printf("<Q4> Flower of Bharat=____?\n1]    Rose\n2]
Lotus\n3]  Sunflower\n");
        scanf("%d",&a);
        if(a==2){
                printf("Correct Answer\n");
        }
        else if(a==1||a==3){
                printf("Wrong answer\n");
                break;
        }
        else{
                printf("Choose appropriate option\n Quiz Terminated\n");
                break;
        }
        printf("<Q5> The National Song 'Vande Mataram' was
composed by=____?\n1] Rabindranath Tagore\n2]  Swami Vivekananda\n3]  Bankim Chandra
Chattopadhyay\n");
        scanf("%d",&a);
if(a==3){
                printf("Correct Answer\n");
```

```c
printf("lets play\n");
printf("In this quiz there are total 15 question, in which:\n5 Question-Easy\n5 Question-Moderate\n5 Question-Hard\n");
printf("\nLet's Start:\n");
printf("<Q1> Who is the Current Prime Minister of Bharat=____?\n1] Narendra Modi\n2] Rahul Gandhi\n3] Amit Shah\n");
scanf("%d",&a);
if(a==1){
        printf("Correct Answer\n");
}
else if(a==2||a==3){
        printf("Wrong answer\n");
        break;
}
else{
        printf("Choose appropriate option\n Quiz Terminated\n");
        break;
}
printf("<Q2> Which City is known as the 'Pink City' of Bharat=____?\n1] Surat\n2] Mumbai\n3] Jaipur\n");
scanf("%d",&a);
if(a==3){
        printf("Correct Answer\n");
}
else if(a==1||a==2){
        printf("Wrong answer\n");
        break;
}
else{
        printf("Choose appropriate option\n Quiz Terminated\n");
        break;
printf("<Q3> Which Indian Festival is Known as the 'Festival of Light'=____?\n1] Diwali\n2] Holi\n3] Onam\n");
```

```c
        }
                            else if(a==1||a==3){
                                    printf("Wrong answer\n");
                                    break;
                            }
                            else{
                                    printf("Choose appropriate option\n Quiz Terminated\n");
                                    break;
                            }
                            printf("<Q6> The First Woman Prime Minister of
India=____?\n1] Mother Teresa\n2] Indira Gandhi\n3] Droupadi Murmu\n");
                            scanf("%d",&a);
                            if(a==2){
                                    printf("Correct Answer\n");
                            }
                            else if(a==1||a==3){
                                    printf("Wrong answer\n");
                                    break;
                            }
                            else{
                                    printf("Choose appropriate option\n Quiz Terminated\n");
                                    break;
                            }
                            printf("<Q7> Who is the Author of Ramayana=____?\n1]
Valmiki\n2] Tulsidas\n3] Ved Vyasa\n");
                            scanf("%d",&a);
                            if(a==1){
                                    printf("Correct Answer\n");
                            }
                            else if(a==2||a==3){
                                    printf("Wrong answer\n");
 break;
                            }
```

```c
else{
                        printf("Choose appropriate option\n Quiz Terminated\n");
                        break;
            }
            printf("<Q8>    Which    Country    will    host    '2024'
Olympics=____?\n1]  USA\n2]  Russia\n3]  France\n");
            scanf("%d",&a);
            if(a==3){
                printf("Correct Answer\n");
            }
            else if(a==1||a==2){
                printf("Wrong answer\n");
                break;
            }
            else{
                printf("Choose appropriate option\n Quiz Terminated\n");
                break;
            }
            printf("<Q9>  'RSS' was originated from which city before
Independence=____?\n1]  Noida\n2]  Nagpur\n3]  Bombay\n");
            scanf("%d",&a);
            if(a==2){
                printf("Correct Answer\n");
            }
            else if(a==1||a==3){
                printf("Wrong answer\n");
                break;
            }
            else{
                printf("Choose appropriate option\n Quiz Terminated\n");
                break;
            }
printf("<Q10> Which Indian state is known as the 'Land of Five Rivers'=____?\n1]  Punjab\n2]
```

```
Gujarat\n3]  Uttar Pradesh\n");
                        scanf("%d",&a);
                        if(a==1){
                                printf("Correct Answer\n");
                        }
                        else if(a==2||a==3){
                                printf("Wrong answer\n");
                                break;
                        }
                        else{
                                printf("Choose appropriate option\n Quiz Terminated\n");
                                break;
                        }
                        printf("<Q11>  Indian Flag was first designed by=____?\n1]
Pingali Venkayya\n2]  Mrs Anne Besant\n3]  Madame Cama\n");
                        scanf("%d",&a);
                        if(a==1){
                                printf("Correct Answer\n");
                        }
                        else if(a==2||a==3){
                                printf("Wrong answer\n");
                                break;
                        }
                        else{
                                printf("Choose appropriate option\n Quiz Terminated\n");
                                break;
                        }
                        printf("<Q12> Which is the highest mountain peak in
India=____?\n1]  K2\n2]  Mount Everest\n3]  Kanchenjunga\n");
                        scanf("%d",&a);
                        if(a==3){
                                printf("Correct Answer\n");
```

```
        }
                                else if(a==1||a==2){
                                        printf("Wrong answer\n");
                                        break;
                                }
                                else{
                                        printf("Choose appropriate option\n Quiz Terminated\n");
                                        break;
                                }
                                printf("<Q13>  I am a three-digit number. My tens digit is
five more than my ones digit, and my hundreds digit is eight less than my tens digit. What number
am I=____?\n1]  582\n2]  473\n3]  391\n");
                                scanf("%d",&a);
                                if(a==3){
                                        printf("Correct Answer\n");
                                }
                                else if(a==1||a==2){
                                        printf("Wrong answer\n");
                                        break;
                                }
                                else{
                                        printf("Choose appropriate option\n Quiz Terminated\n");
                                        break;
                                }
                                printf("<Q14>  If you randomly select a letter from the
word 'PROBABILITY', what is the probability of selecting a vowel=____?\n1]  1/11\n2]
3/11\n3]  4/11\n");
                                scanf("%d",&a);
                                if(a==3){
                                        printf("Correct Answer\n");
                                }
 else if(a==1||a==2){
                                        printf("Wrong answer\n");
```

```
                                        break;
                        }
                        else{
                                printf("Choose        appropriate        option\n      Quiz
Terminated\n");
                                break;
                        }
                        printf("<Q15>  On which mountain is the city of shri
lanka located=_____?\n1] Trikuta\n2] Gandhamadana\n3] Sumeru\n");
                        scanf("%d",&a);
                        if(a==1){
                                printf("Correct Answer\n");
                        }
                        else if(a==2||a==3){
                                printf("Wrong answer\n");
                                break;
                        }
                        else{
                                printf("Choose        appropriate        option\n      Quiz
Terminated\n");
                                break;
                        }
                        break;
                case'-':
                        printf("OK!!\nAs Your Wish");
                        break;
                default:
                        printf("Type '+' or '-'.");
        }
        return 0;
}
```

4. OUTPUT:
a) If user/player want to play the game:

```
Welcome to the Quiz Game:
Are you ready to play the game (type '+'for Yes or '-'for No)
+
lets play
In this quiz there are total 15 question, in which:
5 Question-Easy
5 Question-Moderate
5 Question-Hard

Let's Start:
<Q1>  Who is the Current Prime Minister of Bharat=____?
1]  Narendra Modi
2]  Rahul Gandhi
3]  Amit Shah
1
Correct Answer
<Q2>  Which City is known as the 'Pink City' of Bharat=____?
1]  Surat
2]  Mumbai
3]  Jaipur
3
Correct Answer
<Q3>  Which Indian Festival is Known as the 'Festival of Light'=____?
1]  Diwali
2]  Holi
3]  Onam
1
Correct Answer
<Q4>  National Flower of Bharat=____?
1]  Rose
2]  Lotus
3]  Sunflower
2
Correct Answer
<Q5>  The National Song 'Vande Mataram' was composed by=____?
1]  Rabindranath Tagore
2]  Swami Vivekananda
3]  Bankim Chandra Chattopadhyay
3
Correct Answer
```

```
<Q6>  The First Woman Prime Minister of India=____?
1]  Mother Teresa
2]  Indira Gandhi
3]  Droupadi Murmu
2
Correct Answer
<Q7>  Who is the Author of Ramayana=____?
1]  Valmiki
2]  Tulsidas
3]  Ved Vyasa
1
Correct Answer
<Q8>  Which Country will host '2024' Olympics=____?
1]  USA
2]  Russia
3]  France
3
Correct Answer
<Q9>  'RSS' was originated from which city before Independence=____?
1]  Noida
2]  Nagpur
3]  Bombay
2
Correct Answer
<Q10>  Which Indian state is known as the 'Land of Five Rivers'=____?
1]  Punjab
2]  Gujarat
3]  Uttar Pradesh
1
Correct Answer
<Q11>  Indian Flag was first designed by=____?
1]  Pingali Venkayya
2]  Mrs Anne Besant
3]  Madame Cama
1
Correct Answer
```

```
<Q12>  Which is the highest mountain peak in India=___?
1]  K2
2]  Mount Everest
3]  Kanchenjunga
3
Correct Answer
<Q13>  I am a three-digit number. My tens digit is five more than my ones digit, and my hundreds digit is eight less than my tens digit. What number am I=__
__?
1]  582
2]  473
3]  391
3
Correct Answer
<Q14>  If you randomly select a letter from the word 'PROBABILITY', what is the probability of selecting a vowel=___?
1]  1/11
2]  3/11
3]  4/11
3
Correct Answer
<Q15>  On which mountain is the city of shri lanka located=___?
1]  Trikuta
2]  Gandhamadana
3]  Sumeru
1
Correct Answer

------------------------------
Process exited after 62.06 seconds with return value 0
Press any key to continue . . .
```

b) If user/player don't want to play:

```
C:\C Program\extra work\Quiz    ×    +    ∨

Welcome to the Quiz Game:
Are you ready to play the game (type '+'for Yes or '-'for No)
-
OK!!
As Your Wish
--------------------------------
Process exited after 1.808 seconds with return value 0
Press any key to continue . . .
```

c) If user/player give invalid response:

```
C:\C Program\extra work\Quiz    ×    +    ∨

Welcome to the Quiz Game:
Are you ready to play the game (type '+'for Yes or '-'for No)
+
lets play
In this quiz there are total 15 question, in which:
5 Question-Easy
5 Question-Moderate
5 Question-Hard

Let's Start:
<Q1>   Who is the Current Prime Minister of Bharat=____?
1]   Narendra Modi
2]   Rahul Gandhi
3]   Amit Shah
8
Choose appropriate option
 Quiz Terminated

--------------------------------
Process exited after 11.07 seconds with return value 0
Press any key to continue . . .
```
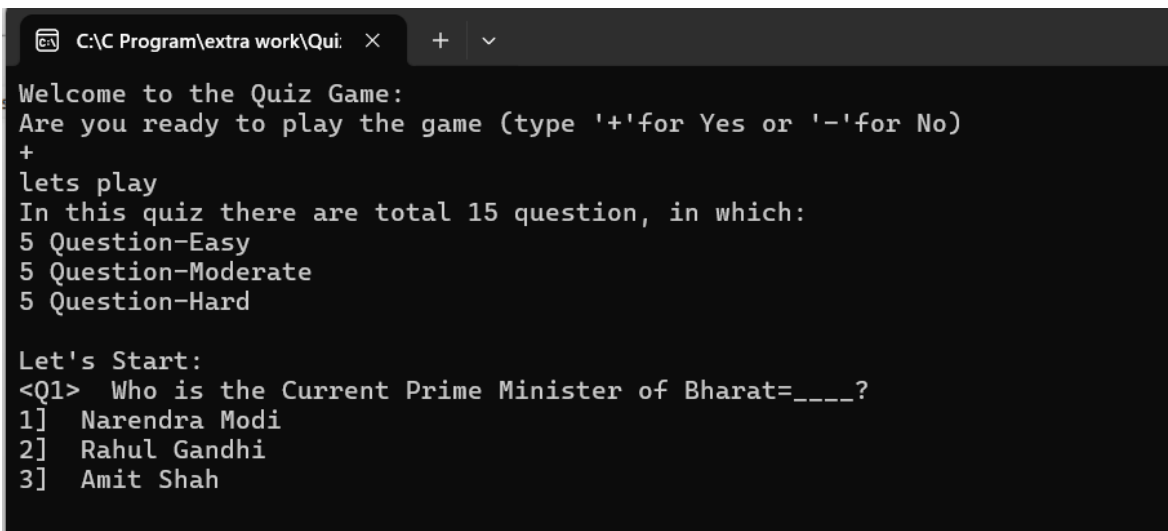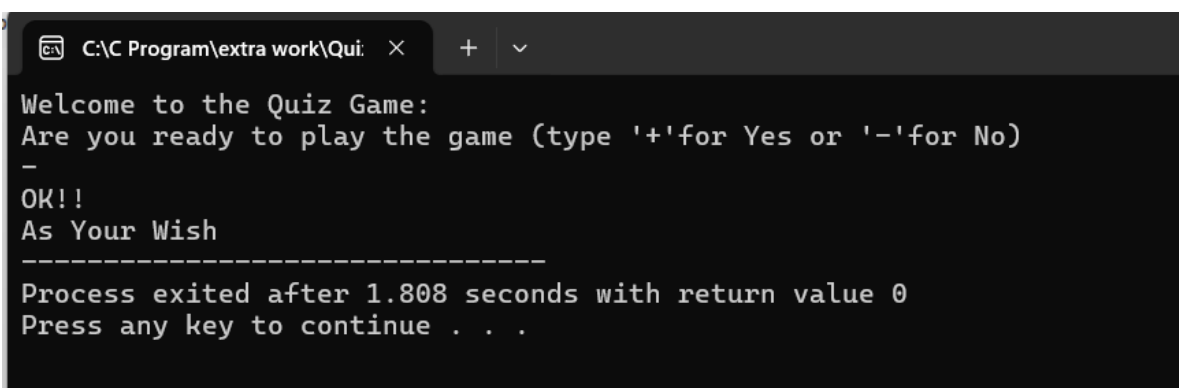
5. <u>Functionality:</u>

The functionality of this code implements a simple quiz game where the user is prompted to play by entering either '+' for Yes or '-' for No. Here's a breakdown of its functionality:

1. *Welcome Message and User Input:*

   The program starts by displaying a welcome message and asking the user if they are ready to play the game. The user is prompted to input their response by entering '+' for Yes or '-' for No.

2. *Switch Statement:*

   The user's input is processed using a switch statement based on the value of the variable sym.

   If the user enters '+', indicating they are ready to play, the quiz game begins.

```
⊡  C:\C Program\extra work\Qui  ✕   +  ⌄

Welcome to the Quiz Game:
Are you ready to play the game (type '+'for Yes or '-'for No)
+
lets play
In this quiz there are total 15 question, in which:
5 Question-Easy
5 Question-Moderate
5 Question-Hard

Let's Start:
<Q1>  Who is the Current Prime Minister of Bharat=____?
1]  Narendra Modi
2]  Rahul Gandhi
3]  Amit Shah
```

If the user enters '-', indicating they do not want to play, a message is displayed indicating the end of the game.

```
⊡  C:\C Program\extra work\Qui  ✕   +  ⌄

Welcome to the Quiz Game:
Are you ready to play the game (type '+'for Yes or '-'for No)
-
OK!!
As Your Wish
--------------------------------
Process exited after 1.808 seconds with return value 0
Press any key to continue . . .
```

3. *Quiz Game:*

 If the user enters '+', the program proceeds to present a series of 15 questions to the user, divided into categories: Easy, Moderate, and Hard.

For each question, the program displays the question along with multiple-choice options and prompts the user to input their answer.

After each question, the program evaluates the user's response and provides feedback indicating whether the answer is correct or incorrect.

```
⊡  C:\C Program\extra work\Qui:  ×   +   ∨
Welcome to the Quiz Game:
Are you ready to play the game (type '+'for Yes or '-'for No)
+
lets play
In this quiz there are total 15 question, in which:
5 Question-Easy
5 Question-Moderate
5 Question-Hard

Let's Start:
<Q1>  Who is the Current Prime Minister of Bharat=____?
1]   Narendra Modi
2]   Rahul Gandhi
3]   Amit Shah
1
Correct Answer
<Q2>  Which City is known as the 'Pink City' of Bharat=____?
1]   Surat
2]   Mumbai
3]   Jaipur
```

If the user enters an invalid response (not 1, 2, or 3), the program informs them to choose the appropriate option and terminates the quiz.

```
⊡  C:\C Program\extra work\Qui:  ×   +   ∨

Welcome to the Quiz Game:
Are you ready to play the game (type '+'for Yes or '-'for No)
+
lets play
In this quiz there are total 15 question, in which:
5 Question-Easy
5 Question-Moderate
5 Question-Hard

Let's Start:
<Q1>  Who is the Current Prime Minister of Bharat=____?
1]   Narendra Modi
2]   Rahul Gandhi
3]   Amit Shah
8
Choose appropriate option
 Quiz Terminated

------------------------------
Process exited after 11.07 seconds with return value 0
Press any key to continue . . . |
```
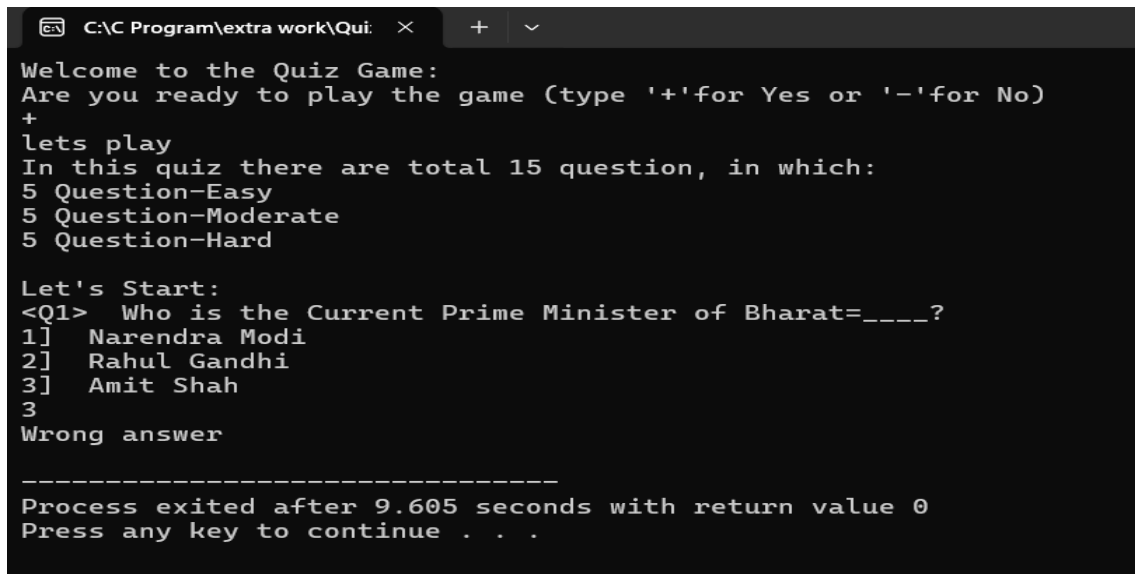
4. **Handling User Input:**

The program uses scanf() to read the user's input for each question. It expects an integer input corresponding to the user's choice among the multiple-choice options.

After reading the user's input, the program compares it to the correct answer using if-else statements. If the user's input matches the correct answer, it displays "Correct Answer"; otherwise, it displays "Wrong answer" and proceeds to the next question.

5. ***Quiz Termination:***

If the user answers incorrectly or inputs an invalid response, the quiz terminates with a message indicating the reason for termination.

```
C:\C Program\extra work\Qui:    ×    +    ∨
Welcome to the Quiz Game:
Are you ready to play the game (type '+'for Yes or '-'for No)
+
lets play
In this quiz there are total 15 question, in which:
5 Question-Easy
5 Question-Moderate
5 Question-Hard

Let's Start:
<Q1>  Who is the Current Prime Minister of Bharat=____?
1]  Narendra Modi
2]  Rahul Gandhi
3]  Amit Shah
3
Wrong answer

_____
Process exited after 9.605 seconds with return value 0
Press any key to continue . . .
```

Overall, the functionality of the code provides a basic implementation of a quiz game in C, allowing users to test their knowledge with a series of multiple-choice questions and receive immediate feedback on their responses.

6. <u>Conclusion:</u>

The provided C code presents a basic quiz game where users answer multiple-choice questions. It demonstrates fundamental programming concepts and offers an opportunity for users to test their knowledge. The code is user friendly easy to understand, with 5-easy question, 5-moderate question, 5-hard question and also, if the user any invalid response the game will terminated.

7. <u>Reference:</u>

1) https://wwwgeeksforgeeks.com

2) https://google.com

3) https://chat.openai.com

4) https://openai.com

5) https://wwwprogramize.com