

In this report we are going to write two simple programs with C++ to explore the basic functions of this programming language.

TASKS

#1

Create a small question/answer game in C, the number and questions are your choice.

The game should work in such a way as to:

- Present a quick introduction to the user with the program's purpose
- Show the user an initial choice menu between: A Start a new game; B Exit the game
- Receive user choice input- Create or not create a new game based on user input
- Receive user name input in case of a new game
- Present a set of multiple choice questions to the user (at least 3 answers per question)
- Evaluate the user's answer for each question and update a "score variable in case of correct answer"
- Display on screen at the end of the game the score totaled by the current player
- Present again the text for choosing between: A Start a new game; B Exit

#2

When you complete the previous exercise, adjust the code so that the score remains in memory and is added up game by game.

EXECUTION

#1

```
Visual Studio - EpiQuiz.cpp

1  #include <stdio.h>
2  #include <cctype>
3  //Introductory function to welcome the user
4  //It doesn't return anything, it just prints a welcome message
5  void intro() {
6      printf ("\nWelcome to EpiQuiz\n");
7      printf ("Answer the questions and check your score!\n");
8  }
9  //Function to select the game mode
10 //It returns a char value that indicates the user's choice
11 char select () {
12     char sel;
13     char name[50];
14     printf ("Insert your name:\n");
15     scanf (" %s", name);
16     printf ("\nHello, %s! Let's start the quiz!\n", name);
17     printf ("\nMain Menu:\n");
18     printf ("A - Start a new game\n");
19     printf ("B - Exit game\n");
20     printf ("Select an option: ");
21     scanf (" %c",&sel);
22     sel = toupper(sel);
23     return sel;
24 }
```

```

25 //Main function that runs the program
26 int main() {
27     char choice;
28     char response = 'Y';
29     intro();
30
31     choice = select ();
32     //Call the function to select the game mode
33     //If the user selects 'A', the game starts, otherwise it exits
34     while (choice != 'A' && choice != 'B'){
35         printf ("Invalid input.\n\n");
36         choice = select();
37     }
38     if (choice == 'B'){
39         printf ("Bye bye!");
40         return 0;
41     }
42     else {
43         //Questions and answers
44         //The game loop continues until the user chooses to exit
45         do
46         {
47             int i= 0; // Initialize score for each game session
48             char q1;
49             printf ("\nWhat is the operating system developed by Microsoft?:\n");
50             printf ("A - MacOS\n");
51             printf ("B - Windows\n");
52             printf ("C - Android\n");
53             scanf (" %c", &q1);
54             if (toupper(q1) == 'B'){
55                 printf ("Correct!\n\n");
56                 i++;
57             }
58             else{
59                 printf ("Wrong :(\n\n");
60             }
61             char q2;
62             printf ("\nWhat protocol is used to surf the Internet?:\n");
63             printf ("A - HTTP\n");
64             printf ("B - FTP\n");
65             printf ("C - LSD\n");
66             scanf (" %c", &q2);
67             if (toupper(q2) == 'A'){
68                 printf ("Correct!\n\n");
69                 i++;
70             }
71             else{
72                 printf ("Wrong :(\n\n");
73             }
74             char q3;
75             printf ("\nWhich of these is a type of volatile memory?:\n");
76             printf ("A - RAM\n");
77             printf ("B - ROM\n");
78             printf ("C - REM\n");
79             scanf (" %c", &q3);
80             if (toupper(q3) == 'A'){
81                 printf ("Correct!\n\n")

```

```

87     printf ("Your score is %d correct answers up to 3!",i);
88     printf("\nDo you want to play again? (Y/N): ");
89     scanf(" %c", &response);
90     response = toupper(response);
91     if (response == 'Y') {
92         choice = 'A'; // Continue the loop for another game
93     } else {
94         choice = 'B'; // Exit the loop
95         printf("\nThanks for playing!\n");
96     }
97 } while (response == 'Y');
98     }
99     printf ("Bye bye!");
100
101 return 0;
102 }
103

```

//comment

For the program's functionality, the parts "Intro" and "Start Menu Selection" have been written as two separate functions, which are called within the main program.

The variable `i` is declared and initialized inside the "questions loop," so the score resets to 0 at the start of every game.

#2

To keep track of the score for every match when the user decides to restart the game, i simply moved the initialization of the counter `i` outside the questions loop.

```

26 int main() {
27     int i= 0;
28     char choice;
29     char response = 'Y';
30     intro();
31
32     choice = select ();
33     //Call the function to select the game mode
34     //If the user selects 'A', the game starts, otherwise it exits
35     while (choice != 'A' && choice != 'B'){
36         printf ("Invalid input.\n\n");
37         choice = select();
38     }
39     if (choice == 'B'){
40         printf ("Bye bye!");
41         return 0;
42     }
43     else {

```

#Output example

```
Welcome to EpiQuiz
Answer the questions and check your score!
Insert your name:
Fabio

Hello, Fabio! Let's start the quiz!

Main Menu:
A - Start a new game
B - Exit game
Select an option: a

What is the operating system developed by Microsoft?:
A - MacOS
B - Windows
C - Android
b
Correct!

What protocol is used to surf the Internet?:
A - HTTP
B - FTP
C - LSD
a
Correct!

Which of these is a type of volatile memory?:
A - RAM
B - ROM
C - REM
b
Wrong :(

Your score is 2!
Do you want to play again? (Y/N): █
```