

MIDTERM PROJECT

SECTION 5

ARYAN RAO

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10/11/2021

Problem

We are supposed to write a code which uses random function to assign one quiz out of three to the user. The code will calculate the marks in a single quiz by counting the number of attempts as well and will also give a total score of all the quizzes taken.

Analysis

We will write three quizzes with three questions each. The questions will be displayed one by one so if the user enters a wrong answer, he is alerted. Wrong questions will be displayed after the end of a single quiz. Also give 10 points as a bonus if more than one quiz is taken.

Design

The main conditions will be checked by switch and if-else statements. Since we want to see if the user wishes to continue, we are going to put everything inside a while loop and use the same in cases of switch as well.

Testing

Calculate the total score of each quiz and the average total score and check it manually with your answer to compare.

Comments

The use of so many conditional statements might create a confusion with braces. Use indentation to avoid this. Make sure to add the required library functions like strcmp, srand and rand and their respective header files like string.h and stdlib.h.

SCREENSHOTS

CODE:

```
C midtermProject.c x
Users > aryan > Desktop > C > C: midtermProject.c > ...

1  /*
2  - SE 185: Midterm Project
3  - List the names of all team members, their roles, and their participation
4  1- Student 1 - TEJAL DEVSHETWAR
5  | | | | Role: Quiz Creator and Coding - Participation: 50%
6  I created the questions for all the quizzes, did some debugging, corrected some logical mistakes and helped to write the code.
7  2- Student 2 - ARYAN RAO
8  | | | | Role: Debugger and Coding- Participation: 50%
9  I implemented the logic behind the code, did some debugging and wrote the code.
10 3-
11 4-
12 5-
13 -----*/
14
15 /*----- Includes -----*/
16
17 #include <string.h>
18 #include <stdlib.h>
19 #include <stdio.h>
20 #include <time.h>
21
22
23 /*----- Notes -----*/
24
25 -----*/
26
27 // Compile with gcc midtermProject.c -o proj
28
29 /*----- Implementation -----*/
30
31 -----*/
32
33
34
35 int main(int argc, char *argv[])
36 {
37     char c[5];
38     double total=0;
39     while(strcmp(c,"No"))
40     {
41         printf("Welcome! We have 3 quizzes in total.\n Quiz 1- Based on General Programming. \n Quiz 2- Based on condition statements and arrays. \n Quiz 3- Based on ident
42         int no,a1=0,a2=0,a3=0,a4=0;
43         int test1=0,test2=0,test3=0;
44         int marks1_1 = 0;
45         int marks1_2 = 0;
46         int marks1_3 = 0;
```

```
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33
34
35 int main(int argc, char *argv[])
36 {
37     char c[5];
38     double total=0;
39     while(strcmp(c,"No"))
40     {
41         printf("Welcome! We have 3 quizzes in total.\n Quiz 1- Based on General Programming. \n Quiz 2- Based on condition statements and arrays. \n Quiz 3- Based on ident
42         int no,a1=0,a2=0,a3=0,a4=0;
43         int test1=0,test2=0,test3=0;
44         int marks1_1 = 0;
45         int marks1_2 = 0;
46         int marks1_3 = 0;
47         int marks2_1 = 0;
48         int marks2_2 = 0;
49         int marks2_3 = 0;
50         int marks3_1 = 0;
51         int marks3_2 = 0;
52         int marks3_3 = 0;
53         char c1_1[5],c1_3[5],c1_4[5],c2_1[5],c2_2[5],c2_3[5],c2_4[5],c2_5[5],c3_1[5],c3_2[5],c3_3[5],c3_4[5];
54         double t1,t2,t3;
55         srand(time(0));
56         printf(" Enter a number between 1 and 9: ");
57         scanf("%d",&no);
58         no=(rand()%3)+1;
59
60
61
62         switch(no)
63         {
64             case 1: while(test1!=3)
65             {
66
67
68                 test1=0;
69                 printf(" Q1 We use stdlib.h library for using random function.\n a)True\n b)False\n");
70                 scanf("%s",c1_1);
71                 if(strcmp(c1_1,"True") == 0)
72                 { marks1_1 = marks1_1 + 5;
73                   test1++;
74                 }
75
76
77                 printf(" Q2 Select the correct options.\n a)It is not a good practice to leave one space between operators.\n b)toLowerCase() converts to lower case.\n
78                 scanf("%s",c1_3);
```

```
C midtermProject.c x
Users > aryan > Desktop > C > C midtermProject.c > ...
67
68     test1=0;
69     printf(" Q1 We use stdlib.h library for using random function.\n a)True\n b)False\n");
70     scanf("%s",c1_1);
71     if(strcmp(c1_1,"True") == 0)
72     { marks1_1 = marks1_1 + 5;
73       test1++;
74     }
75
76
77     printf(" Q2 Select the correct options.\n a)It is not a good practice to leave one space between operators.\n b)tolowerCase() converts to lower case.\n");
78     scanf("%s",c1_3);
79     if(strcmp(c1_3,"b")==0)
80     { marks1_2 = marks1_2 + 5;
81       test1++;
82     }
83
84
85     printf(" Q3 Fill in the blank.\n We know x=2 already.\n (x__2)75:9 \n");
86     scanf("%s",c1_4);
87     if( strcmp(c1_4,"==")==0)
88     { marks1_3 =marks1_3 + 5;
89       test1++;
90     }
91
92     ++a1;
93
94
95
96     if(marks1_1==0)
97     { printf("Q1 is wrong.\n"); }
98     if( marks1_2==0)
99     { printf("Q2 is wrong.\n"); }
100    if(marks1_3==0)
101    { printf("Q3 is wrong.\n"); }
102
103
104
105    }
106    printf("%d %d %d\n", marks1_1,marks1_2,marks1_3);
107    t1=(double)(marks1_3+marks1_2+marks1_3)/a1;
108    printf("Total Score for Quiz 1: %.2lf\n",t1);
109    total+=t1;
110
111    break;
112
```

```
C midtermProject.c x
Users > aryan > Desktop > C > C midtermProject.c > ...
110
111    break;
112
113
114    case 2:
115        while(test2!=3)
116        {
117            test2=0;
118            printf(" Q1 Is default case compulsory to use in switch statement.\n a)True\n b)False\n");
119            scanf("%s",c2_1);
120
121            if(strcmp(c2_1,"True") == 0)
122            { marks2_1 = marks2_1 + 5;
123              test2++;
124            }
125
126            printf(" Q2 Select the correct statements.\n a)We write break statement after each case in switch statements.\n b)Double is not used for floating point n");
127            scanf("%s",c2_2);
128            if(strcmp(c2_2,"a")==0)
129            { marks2_2 = marks2_2 + 5;
130              test2++;
131            }
132
133            printf(" Q3 Fill in the blank with operator to iterate the loop 10 times.\n for(int i=0;i<=""10;i++);\n");
134            scanf("%s",c2_4);
135            if( strcmp(c2_4,"<")==0)
136            { marks2_3 =marks2_3 + 5;
137              test2++;
138            }
139            ++a2;
140
141            if(marks2_1==0)
142            { printf("Q1 is wrong.\n"); }
143            if( marks2_2==0)
144            { printf("Q2 is wrong.\n"); }
145            if(marks2_3==0)
146            { printf("Q3 is wrong.\n"); }
147
148        }
149        t2=(double)(marks2_3+marks2_2+marks2_3)/a2;
150        total+=t2;
151        printf("Total Score for Quiz 2: %.2lf\n",t2);
152        break;
153
154    case 3:
155
```

```
C midtermProject.c
Users > aryan > Desktop > C > C: midtermProject.c > main(int, char* [])
154
155     case 3:
156         while(test3!=3)
157         {
158             test3=0;
159
160             printf(" Q1 A function definition consists of new function name and a block of statements.\n a)True\n b)False\n");
161             scanf("%s",c3_1);
162             if(strcmp(c3_1,"True") == 0)
163             { marks3_1 = marks3_1 +5;
164               test3++;
165             }
166
167             printf(" Q2 Select the correct statements.\n a)We cannot use reserved words for naming variables.\n b)Identifiers are not case sensitive.\n c)const is
168             scanf("%s",c3_2);
169             if(strcmp(c3_2,"a")==0)
170             { marks3_2 = marks3_2 + 5;
171               test3++;
172             }
173
174             printf(" Q3 Fill in the blank.\n for(int i=0;i<1;i++){ \n");
175             scanf("%s",c3_4);
176             if( strcmp(c3_4,"++")==0)
177             { marks3_3 =marks3_3 + 5;
178               test3++;
179             }
180
181             ++a3;
182
183             if(marks3_1==0)
184             { printf("Q1 is wrong."); }
185             if( marks3_2==0)
186             { printf("Q2 is wrong."); }
187             if(marks3_3==0)
188             { printf("Q3 is wrong."); }
189
190             t3=(double)(marks3_3+marks3_2+marks3_1)/a3;
191             total+=t3;
192             printf("Total Score for Quiz 3: %.2lf\n",t3);
193
194             break;
195
196
197
198
199
```

```
C midtermProject.c
Users > aryan > Desktop > C > C: midtermProject.c > main(int, char* [])
194
195     }
196     t3=(double)(marks3_3+marks3_2+marks3_1)/a3;
197     total+=t3;
198     printf("Total Score for Quiz 3: %.2lf\n",t3);
199     break;
200
201     default: printf("Wrong input of data\n");
202     break;
203
204 }
205 ++a4;
206
207 printf("Do you want to take another quiz ???\n Enter Yes to take and No to Quit\n");
208 scanf("%s",c);
209
210 if(a4>1)
211 {
212     total+=10;
213 }
214
215 }
216
217 printf("Total scores accross all quizzes : %.2lf\n",total);
218
219
220
221
222
223 return 0;
224
225 }
226
227
228
```

OUPUT:

```
Last login: Tue Oct 12 14:45:07 on ttys000
aryan@aryanrao11 ~ % /Users/aryan/Desktop/C/midtermProject ; exit;
Welcome! We have 3 quizzes in total.
Quiz 1- Based on General Programming.
Quiz 2- Based on condition statements and arrays.
Quiz 3- Based on identifiers and loops.
Enter a number between 1 and 9: 3
Q1 Is default case compulsory to use in switch statement.
a)True
b)False
True
Q2 Select the correct statements.
a)We write break statement after each case in switch statements.
b)Double is not used for floating point numbers.
c)Array is used to store single item.
d)Array index starts from 1.
a
Q3 Fill in the blank with operator to iterate the loop 10 times.
for(int i=0;i__10;i++);
<
Total Score for Quiz 2: 15.00
Do you want to take another quiz ???
Enter Yes to take and No to Quit
No
Total scores accross all quizzes : 15.00
Saving session...
```

```
aryan@aryanrao11 ~ % /Users/aryan/Desktop/C/midtermProject ; exit;
Welcome! We have 3 quizzes in total.
Quiz 1- Based on General Programming.
Quiz 2- Based on condition statements and arrays.
Quiz 3- Based on identifiers and loops.
Enter a number between 1 and 9: 7
Q1 We use stdlib.h library for using random function.
a)True
b)False
False
Q2 Select the correct options.
a)It is not a good practice to leave one space between operators.
b)toLowerCase() converts to lower case.
c)Integer data types are used for decimals
d)toUpperCase() converts to lower case.
c
Q3 Fill in the blank.
We know x=2 already.
(x__2)?5:9
==
Q1 is wrong.
Q2 is wrong.
Q1 We use stdlib.h library for using random function.
a)True
b)False
True
Q2 Select the correct options.
a)It is not a good practice to leave one space between operators.
b)toLowerCase() converts to lower case.
c)Integer data types are used for decimals
d)toUpperCase() converts to lower case.
d
Q3 Fill in the blank.
We know x=2 already.
(x__2)?5:9
==
Q2 is wrong.
Q1 We use stdlib.h library for using random function.
a)True
b)False
True
Q2 Select the correct options.
a)It is not a good practice to leave one space between operators.
b)toLowerCase() converts to lower case.
c)Integer data types are used for decimals
d)toUpperCase() converts to lower case.
b
Q3 Fill in the blank.
We know x=2 already.
(x__2)?5:9
==
10 5 15
Total Score for Quiz 1: 11.67
Do you want to take another quiz ???
Enter Yes to take and No to Quit
No
Total scores accross all quizzes : 11.67
Saving session...
```

```

Welcome! We have 3 quizzes in total.
Quiz 1- Based on General Programming.
Quiz 2- Based on condition statements and arrays.
Quiz 3- Based on identifiers and loops.
Enter a number between 1 and 9: 2
Q1 A function definition consists of new function name and a block of statements.
a)True
b)False
True
Q2 Select the correct statements.
a)We cannot use reserved words for naming variables.
b)Identifiers are not case sensitive.
c)const is not a keyword.
d)Binary has base 16.
b
Q3 Fill in the blank.
for(int i=0;i<1;i___){}
++
Q2 is wrong. Q1 A function definition consists of new function name and a block of statements.
a)True
b)False
True
Q2 Select the correct statements.
a)We cannot use reserved words for naming variables.
b)Identifiers are not case sensitive.
c)const is not a keyword.
d)Binary has base 16.
a
Q3 Fill in the blank.
for(int i=0;i<1;i___){}
++
Total Score for Quiz 3: 12.50
Do you want to take another quiz ???
Enter Yes to take and No to Quit
Yes
Welcome! We have 3 quizzes in total.
Quiz 1- Based on General Programming.
Quiz 2- Based on condition statements and arrays.
Quiz 3- Based on identifiers and loops.
Enter a number between 1 and 9: 9
Q1 We use stdlib.h library for using random function.
a)True
b)False
True
Q2 Select the correct options.
a)It is not a good practice to leave one space between operators.
b)toLowerCase() converts to lower case.
c)Integer data types are used for decimals
d)toUpperCase() converts to lower case.
b
Q3 Fill in the blank.
We know x=2 already.
(x___2)?5:9
==
5 5 5
Total Score for Quiz 1: 15.00
Do you want to take another quiz ???
Enter Yes to take and No to Quit
No
Total scores across all quizzes : 27.50
Saving session...

```