R VRSHA SOLACHI

NPTEL ASSIGNMENT -

Problem Solving Through Programming In C

WEEK 4 – MCQ QUIZ

Week 4 : Assignment 4

The due date for submitting this assignment has passed.

Due on 2023-08-23, 23:59 IST.

Assignment submitted on 2023-08-23, 23:34 IST

1) What is the purpose of the "if-else" statement in C? ***1 point***

- a) To execute a block of code repeatedly.
- b) To declare variables and constants.
- c) To test a condition and execute different code based on the result.
- d) To perform mathematical calculations.

Yes, the answer is correct.
Score: 1
Accepted Answers:
c) To test a condition and execute different code based on the result.

2) What is the correct syntax for an "if-else" statement in C? ***1 point***

- a) if condition { statement1; statement2; } else { statement3; }
- b) if condition then { statement1; } else { statement2; }
- c) if (condition) { statement1; } else { statement2; }
- d) if condition then statement1; else statement2;

Yes, the answer is correct.
Score: 1
Accepted Answers:
c) if (condition) { statement1; } else { statement2; }

3) Which of the following is true about nested "if-else" statements? ***1 point***

- a) They are not allowed in C.
- b) The "else" part is mandatory for every "if" statement.
- c) They allow you to test multiple conditions and execute different blocks of code based on the results.
- d) Nested "if-else" statements are only allowed up to two levels deep.

Yes, the answer is correct.
Score: 1
Accepted Answers:
c) They allow you to test multiple conditions and execute different blocks of code based on the results.

4) What happens if there is no "else" part in an "if-else" statement? ***1 point***

- a) The program will not compile.
- b) The program will crash at runtime.
- c) If the condition is true, nothing happens; if the condition is false, the program crashes.
- d) If the condition is true, the program executes the code inside the "if" block; if the condition is false, nothing happens.

Yes, the answer is correct.
Score: 1
Accepted Answers:
d) If the condition is true, the program executes the code inside the "if" block; if the condition is false, nothing happens.

5) Which of the following operators can be used to combine multiple conditions in an "if" statement? ***1 point***

- a) && (logical AND)
- b) || (logical OR)
- c) ! (logical NOT)
- d) All of the above

Yes, the answer is correct.
Score: 1
Accepted Answers:
d) All of the above

6) ***1 point***

Compute the printed value of i of the C program given below

```
#include<stdio.h>
int main()
{
    int i=2;
    i=i++;
    printf("%d", i);
    return 0;
}
```

- a) 2
- b) 3
- c) 4
- d) Compiler error

Yes, the answer is correct.
Score: 1
Accepted Answers:
a) 2

7) If multiple conditions are used in a single "if" statement then the testing of those conditions are done ***1 point***

- a) From Right to Left
- b) From Left to right
- c) Randomly
- d) None of the above

Yes, the answer is correct.
Score: 1
Accepted Answers:
b) From Left to right

8) What is the purpose of the given program? n is the input number given by the user. *1 point*

```
#include <stdio.h>
int main()
{
   int n, x = 0, y;
   printf("Enter an integer: ");
   scanf("%d", &n);
   while (n != 0)
     {
      y = n % 10;
      x = x - y;
      n = n/10;
      }
   printf("Output is = %d", x);
   return 0;
}
```

- a) Sum of the digits of a number
- b) The negative sum of the digits of a number
- c) The reverse of a number
- d) The same number is printed

Yes, the answer is correct.
Score: 1
Accepted Answers:
b) The negative sum of the digits of a number

9) What will be the value of a, b, c after the execution of the followings *1 point*

```
int a=5, b=7, c=111;
c /= ++a * b--;
```

- a) a=5, b=6, c=2;
- b) a=6, b=7, c=1;
- c) a=6, b=6,c=2;
- d) a=5, b=7, c=1;

Yes, the answer is correct.
Score: 1
Accepted Answers:
c) a=6, b=6,c=2;

10) What will be the output of the following program? *1 point*

```
#include <stdio.h>
int main()
{
  int x = 1;
  switch (x)
  {
     case 1: printf("Choice is 1 \n");
     default: printf("Choice other than 1 \n");
  }
  return 0;
}
```

- a) Choice is 1
- b) Choice other than 1
- c) Both (a) and (b)
- d) Syntax error

Yes, the answer is correct.
Score: 1
Accepted Answers:
c) Both (a) and (b)

WEEK 4 – PROGRAMMING ASSIGNMENT

Week 4 : Programming Assignment 1

Due on 2023-08-24, 23:59 IST

Write a C Program to Find the Smallest Number among Three Numbers (integer values) using Nested IF-Else statement.

Private Test cases used for evaluation	Input	Expected Output	Actual Output	Status
Test Case 1	90 -9 -80	-80 is the smallest number.	-80 is the smallest number.	Passed
Test Case 2	100 200 0	0 is the smallest number.	0 is the smallest number.	Passed

The due date for submitting this assignment has passed.
2 out of 2 tests passed.
You scored 100.0/100.

Assignment submitted on 2023-08-24, 21:12 IST

Your last recorded submission was :

```c
#include <stdio.h>
int main()
{
    int n1, n2, n3;
    scanf("%d %d %d", &n1, &n2, &n3); /* where three number are read from the test cases and are stored in the variable n1, n2

/* Complete the program to get the desired output */
/* Only use the printf statement given below to exactly match your output
with the output cases. Change the variable n1 as required.

printf("%d is the smallest number.", n1);    //Copy and paste this printf statement wherever required.

*/
if(n1<n2)
    {
        if(n1<n3)
            printf("%d is the smallest number.", n1);
        else
            printf("%d is the smallest number.", n3);
    }
    else
    {
        if(n2<n3)
            printf("%d is the smallest number.", n2);
        else
            printf("%d is the smallest number.", n3);
    }
}
```

Week 4 : Programming Assignment 2

Due on 2023-08-24, 23:59 IST

The length of three sides are taken as input. Write a C program to find whether a triangle can be formed or not. If not display "This Triangle is NOT possible." If the triangle can be formed then check whether the triangle formed is equilateral, isosceles, scalene or a right-angled triangle. (If it is a right-angled triangle then only print Right-angle triangle do not print it as Scalene Triangle).

Private Test cases used for evaluation	Input	Expected Output	Actual Output	Status
Test Case 1	10 4 6	Triangle is not possible	Scalene Triangle	Wrong Answer
Test Case 2	7 6 8	Scalene Triangle	Scalene Triangle	Passed

The due date for submitting this assignment has passed.
1 out of 2 tests passed.
You scored 50.0/100.

Assignment submitted on 2023-08-24, 20:08 IST

Your last recorded submission was :

```c
#include<stdio.h>
int main()
{
    int a,b,c;
    scanf("%d %d %d",&a, &b, &c); /*The length of three sides are entered from the test cases */

/* Complete the program. Copy and paste from the printf statements mentioned below wherever required for printing the outputs

printf("Triangle is not possible");
printf("Right-angle Triangle");
printf("Isosceles Triangle");
printf("Equilateral Triangle");
printf("Scalene Triangle");

*/
if(a==b&&a==c&&b==c){
  printf("Equilateral Triangle");
}
else if(a==b||a==c||b==c){
  printf("Isosceles Triangle");
}
else if((a*a)==(b*b)+(c*c)||(b*b)==(a*a)+(c*c)||(c*c)==(a*a)+(b*b)){
  printf("Right-angle Triangle");
}
else if(a!=b&&a!=c&&b!=c){
  printf("Scalene Triangle");
}
else{
  printf("Triangle is not possible");
}
return 0;
}
```

Week 4 : Programming Assignment 3

Due on 2023-08-24, 23:59 IST

Write a program to find the factorial of a given number using while loop.

Private Test cases used for evaluation	Input	Expected Output	Actual Output	Status
Test Case 1	11	The Factorial of 11 is : 39916800	The Factorial of 11 is : 39916800	Passed
Test Case 2	7	The Factorial of 7 is : 5040	The Factorial of 7 is : 5040	Passed

The due date for submitting this assignment has passed.
2 out of 2 tests passed.
You scored 100.0/100.

Assignment submitted on 2023-08-24, 21:14 IST
Your last recorded submission was :

```c
#include<stdio.h>
void main()
{
    int n;
    long int fact;  /* n is the number whose factorial we have to find and fact is the factorial */
    scanf("%d",&n);  /* The value of n is taken from test cases */

/* complete the program. Use the printf statements in the format mentioned below
to match your output exactly with output test cases

printf("The Factorial of %d is : %ld",n,fact);

You can declare any other variables if required */
    int i=1;
    fact = 1;
    while(i<=n)
    {
        fact*=i;
        i++;
    }
    printf("The Factorial of %d is : %ld",n,fact);
}
```

Week 4 : Programming Assignment 4

Due on 2023-08-24, 23:59 IST

Write a Program to find the sum of all even numbers from 1 to N where the value of N is taken as input. [For example when N is 10 then the sum is 2+4+6+8+10 = 30]

Private Test cases used for evaluation	Input	Expected Output	Actual Output	Status
Test Case 1	25	Sum = 156	Sum = 156	Passed
Test Case 2	30	Sum = 240	Sum = 240	Passed

The due date for submitting this assignment has passed.
2 out of 2 tests passed.
You scored 100.0/100.

Assignment submitted on 2023-08-24, 21:18 IST
Your last recorded submission was :

```c
#include <stdio.h>
void main()
{
int N, sum=0;
scanf("%d", &N); /* The value of N is taken from the test cases */

/* Complete the program. Please use the printf statement given below to
exactly match your output with the test cases.

printf("Sum = %d", sum);

*/
    for(int i = 2; i <= N; i += 2)
    {
        sum += i;
    }
    printf("Sum = %d",sum);
}
```