R VRSHA SOLACHI

NPTEL ASSIGNMENT -

Problem Solving Through Programming In C

WEEK 5 – MCQ QUIZ

Week 5 : Assignment 5

The due date for submitting this assignment has passed.

Due on 2023-08-30, 23:59 IST.

Assignment submitted on 2023-08-30, 18:53 IST

1) The statement that transfers control to the beginning of the loop is called *1 point*

- a) break
- b) continue
- c) goto
- d) None of the above

Yes, the answer is correct.
Score: 1
Accepted Answers:
b) continue

2) In C three way transfer of control is possible using *1 point*

- a) Unary operator
- b) Logical operator
- c) Ternary operator
- d) None

Yes, the answer is correct.
Score: 1
Accepted Answers:
c) Ternary operator

3) *1 point*

What is the output of the following code?

```
#include <stdio.h>
int main()
{
  int i=0;
  do
  {
    printf("while vs do-while\n");
  }while(i==0);
  printf("Out of loop");
   return 0;
}
```

- a) 'while vs do-while' once
- b) 'Out of loop' infinite times
- c) Both 'while vs do-while' and 'Out of loop' once
- d) 'while vs do-while' infinite times

Yes, the answer is correct.
Score: 1
Accepted Answers:
d) 'while vs do-while' infinite times

4) 1 point

What is the output of the following C program?

```
#include <stdio.h>
int main()
{
   int a = 0, i;
   for (i = 0; i < 5; i+=0.5)
   {
      a++;
      continue;
   }
   printf("%d", a);
   return 0;
}
```

- a) 5
- b) 10
- c) No output
- d) Compilation error

Yes, the answer is correct.
Score: 1
Accepted Answers:
c) No output

5) 1 point

What is the output of the following C code?

```
#include <stdio.h>
int main()
{
   int a = 1;
   if (a--)
      printf("True\n");
   if (++a)
      printf("False\n");
return 0;
}
```

- a) True
- b) False
- c) Both 'True' and 'False'
- d) Compilation error

Yes, the answer is correct.
Score: 1
Accepted Answers:
c) Both 'True' and 'False'

6) 1 point

What will be the output?

```
#include <stdio.h>
int main()
{
```

```
int x=1;
   do
   {
    continue;
    printf("%d", x);
    x++;
    break;
    }while(x<=10);
printf("\nAfter loop x=%d", x);
printf("\n");
return 0;
}
```

- a) After loop x=1
- b) 1
  After loop x=2
- c) 1 2 3 4 5 6 7 8 9 10
- d) No output

Yes, the answer is correct.
Score: 1
Accepted Answers:
d) No output

7) *1 point*

What will be the output?

```
#include <stdio.h>
int main()
{
   float k = 0;
   for (k = 0.5; k < 3; k++)
         printf("I love C\n");
   return 0;
}
```

- a) Error
- b) I love C - will be printed 3 times
- c) I love C - will be printed 6 times
- d) I love C - will be printed 5 times

Yes, the answer is correct.
Score: 1
Accepted Answers:
b) I love C - will be printed 3 times

8) *1 point*

What will be the output?

```
#include <stdio.h>
int main()
{
   int x;
   x = 4 < 8 ? 5 != 1 < 5 == 0 ? 1: 2: 3;
   printf("%d", x);
   return 0;
}
```

- a) 1
- b) 2
- c) 3
- d) Error

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

9) *1 point*

The following program is used to find the reverse of a number using C language. Find the missing condition inside while statement (indicated as 'xxxx').

```
#include <stdio.h>
int main()
{
int n, reversedNumber = 0, remainder;

printf("Enter an integer: ");
scanf("%d", &n);

   while(xxxx)
   {
      remainder = n%10;
reversedNumber = reversedNumber*10 + remainder;
      n /= 10;
   }

printf("Reversed Number = %d", reversedNumber);

   return 0;
}
```

- a) n!=0
- b) n==0
- c) n%10==0
- d) n/10==0

Yes, the answer is correct.
Score: 1
Accepted Answers:
a) n!=0

10) *1 point*

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

```
#include <stdio.h>
int main()
   {
int i = 0, j = 15;
      while (i<8, j >9)
      {
i++;
j--;
      }
printf("%d, %d\n", i, j);
return 0;
   }
```

- a) 8,10
- b) 8,9
- c) 6, 9
- d) 7, 10

Yes, the answer is correct.
Score: 1
Accepted Answers:
c) 6, 9

WEEK 5 – PROGRAMMING ASSIGNMENT

Week 5 : Programming Assignment 1

Due on 2023-08-31, 23:59 IST

Write a C program to check whether a given number (N) is a perfect number or not.
[Perfect Number - A perfect number is a positive integer number which is equals to the sum of its proper positive divisors. For example 6 is a perfect number because its proper divisors are 1, 2, 3 and it's sum is equals to 6.]

Private Test cases used for evaluation	Input	Expected Output	Actual Output	Status
Test Case 1	8128	8128 is a perfect number.	8128 is a perfect number.	Passed
Test Case 2	8000	8000 is not a perfect number.	8000 is not a perfect 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 2023-08-31, 22:28 IST
Your last recorded submission was :

```c
#include <stdio.h>
int main()
{
    int N;
    scanf("%d",&N); /* An integer number taken as input from test cases */

/*Complete the program by writing the rest of the code in the space provided.
Copy and paste the printf statement given below wherever required to avoid errors.
printf("\n%d is a perfect number.",N);
printf("\n%d is not a perfect number.",N);
*/
    int sum=0;
    for(int i = 1; i <= N / 2; i++)
    {
        if(N % i == 0)
        {
            sum += i;
        }
    }

    if(sum == N){
        printf("%d is a perfect number.", N);
    }
    else{
        printf("%d is not a perfect number.", N);
    }
    return 0;
}
```

Week 5 : Programming Assignment 2

Due on 2023-08-31, 23:59 IST

Write a C program to count total number of digits of an Integer number (N).

Private Test cases used for evaluation	Input	Expected Output	Actual Output	Status
Test Case 1	45667	The number 45667 contains 5 digits.	The number 45667 contains 5 digits.	Passed
Test Case 2	87	The number 87 contains 2 digits.	The number 87 contains 2 digits.	Passed

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

Assignment submitted on 2023-08-31, 22:29 IST
Your last recorded submission was :

```c
#include <stdio.h>
 int main()
{
    int N;
    scanf("%d",&N); /*The number is accepted from the test case data*/

/* Complete the rest of the code. Please use the printf statements as below
by just changing the variables used in your program

printf("The number %d contains %d digits.",N,count);

*/
int temp, count;
    count=0;
    temp=N;
    while(temp>0)
    {
        count++;
        temp/=10;
    }
    printf("The number %d contains %d digits.",N,count);
}
```

Week 5 : Programming Assignment 3

Due on 2023-08-31, 23:59 IST

Write a C program to check whether the given number(N) can be expressed as Power of Two (2) or not.
For example 8 can be expressed as 2^3.

Private Test cases used for evaluation	Input	Expected Output	Actual Output	Status
Test Case 1	256	256 is a number that can be expressed as power of 2.	256 is a number that can be expressed as power of 2.	Passed
Test Case 2	800	800 cannot be expressed as power of 2.	800 cannot be expressed as power of 2.	Passed

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

Assignment submitted on 2023-08-31, 22:56 IST
Your last recorded submission was :

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

/* Complete the code.
Use the printf statements as below
printf("%d is a number that can be expressed as power of 2.",N);
printf("%d cannot be expressed as power of 2.",N);
*/
 int temp, flag;
    temp=N;
    flag=0;

    while(temp!=1)
    {
        if(temp%2!=0){
            flag=1;
            break;
        }
        temp=temp/2;
    }

    if(flag==0)
        printf("%d is a number that can be expressed as power of 2.",N);
    else
        printf("%d cannot be expressed as power of 2.",N);
}
```

Week 5 : Programming Assignment 4

Due on 2023-08-31, 23:59 IST

Write a C program to find sum of following series where the value of N is taken as input

1+ 1/2 + 1/3 + 1/4 + 1/5 + .. 1/N

Private Test cases used for evaluation	Input	Expected Output	Actual Output	Status
Test Case 1	100	Sum of the series is: 5.19	Sum of the series is: 5.19	Passed
Test Case 2	20	Sum of the series is: 3.60	Sum of the series is: 3.60	Passed

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

Assignment submitted on 2023-08-31, 22:30 IST
Your last recorded submission was :

```c
#include<stdio.h>
int main()
{
int N;
float sum = 0.0;
scanf("%d",&N); /*Read the value of N from test cases provided*/

/* Complete the program. Please use the printf statement given below:

printf("Sum of the series is: %.2f\n",sum);

*/

    int i;
    for(i=1;i<=N;i++)
    {
        sum = sum + ((float)1/(float)i);
    }
    printf("Sum of the series is: %.2f",sum);
}
```