PROGRAMMING IN C

ASSIGNMENT-1

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BATCH - 39

Ques. C program to find Area and Circumference of

main.c

Run

```c
#include <stdio.h>
int main()
{
    int r;
    float area,circumference,pi=3.14;
    printf("Enter radius: ");
    scanf("%d",&r);
    area=pi*r*r;
    circumference=2*pi*r;
    printf("Area of circle:%f",area);
    printf("\nCircumference of circle:%f",circumference);
    return 0;
}
```

Output

```
/tmp/8idh9eh9dU.o
Enter radius: 3
Area of circle:28.260000
Circumference of circle:18.840000
```

Ques. Print the ASCII Value of the character.

```c
#include <stdio.h>
int main()
{
    char CH;
    printf("Enter a character: ");
    scanf("%c",&CH);
    printf("%c",CH);
    printf("%d",CH);
    return 0;
}
```

Output

```
/tmp/8idh9eh9dU.o
Enter a character: A
A65
```

Ques. C program to find area of triangle given base and height

```c
#include <stdio.h>
int main()
{
    int b,h,area;
    printf("Enter base: ");
    scanf("%d",&b);
    printf("Enter height: ");
    scanf("%d",&h);
    area=0.5*b*h;
    printf("Area =%d",area);
    return 0;
}
```

Output

```
/tmp/jxesKh69gB.o
Enter base: 3
Enter height: 6
Area =9
```

Ques. Calculate a simple interest.

```c
#include <stdio.h>
int main()
{
    int p,r,t,si;
    printf("Enter principal:");
    scanf("%d",&p);
    printf("Enter rate:");
    scanf("%d",&r);
    printf("Enter time period:");
    scanf("%d",&t);
    si=p*r*t;
    printf("Simple Interest =%d",si);
    return 0;
}
```

Output

```
/tmp/OwpXysQM5b.o
Enter principal:2
Enter rate:3
Enter time period:7
Simple Interest =42
```

Ques. C program to find percentage of 5 subjects.

```c
#include <stdio.h>
int main()
{
    int n1,n2,n3,n4,n5,sum;
    float percentage;
    printf("Enter marks of 5 subjects: ");
    scanf("%d%d%d%d%d",&n1,&n2,&n3,&n4,&n5);
    sum=n1+n2+n3+n4+n5;
    percentage=sum/5;
    printf("Percentage =%f",percentage);
    return 0;
}
```

Output

```
/tmp/aqP5wniSTh.o
Enter marks of 5 subjects: 23 56 48 79 60
Percentage =53.000000
```

Ques. Convert temperature celcius to fahrenheit.

```c
#include <stdio.h>
int main()
{
    float celsius, fahrenheit;
    printf("Enter temperature in Celsius: ");
    scanf("%f", &celsius);
    fahrenheit = (celsius * 9 / 5) + 32;
    printf("%.2fCelsius = %.2f Fahrenheit", celsius, fahrenheit);
    return 0;
}
```

Output

```
/tmp/fI9PdWtKNQ.o
Enter temperature in Celsius: 100
100.00Celsius = 212.00 Fahrenheit
```

Ques. Check whether a number is negative or positive.

```c
#include <stdio.h>
int main()
{
    int num;
    printf("Enter a number: ");
    scanf("%d", &num);
    if (num <= 0) {
        if (num == 0)
            printf("You entered 0.");
        else
            printf("You entered a negative number.");
    }
    else
        printf("You entered a positive number.");
    return 0;
}
```

Output

```
/tmp/fI9PdWtKNQ.o
Enter a number: -2
You entered a negative number.
```

Ques. Find whether the character is vowel or not.

```c
#include <stdio.h>
int main()
{
    char c;
    int vowel;
    printf("Enter an alphabet: ");
    scanf("%c", &c);
    vowel = (c == 'a' || c == 'e' || c == 'i' || c == 'o' || c ==
        'u' || c == 'A' || c == 'E' || c == 'I' || c == 'O' || c
        == 'U');
    if (vowel)
        printf("%c is a vowel.", c);
    else
        printf("%c is not a vowel.", c);
    return 0;
}
```

Output

```
/tmp/fI9PdWtKNQ.o
Enter an alphabet: s
s is not a vowel.
```

Ques. Calculate the factorial of a given number.

```c
#include <stdio.h>
int main()
{
    int n,i=1,fact=1;
    printf("Enter an integer: ");
    scanf("%d", &n);
    while (i<=n)
    {
        fact=fact*i;
        i=i+1;
    }
    printf("\n Factorial = %d",fact);
    return 0;
}
```

Output

```
/tmp/fI9PdWtKNQ.o
Enter an integer: 6
Factorial = 720
```

Ques. C program to read integer and print first 3 powers.

```c
#include <stdio.h>
int main()
{
    int num;
    printf("\nEnter The Number: ");
    scanf("%d", &num);
    printf("\n First three powers = ");
    printf("%d ,%d ,%d", num, num *num, num *num *num);
    return 0;
}
```

Output

```
/tmp/fI9PdWtKNQ.o
Enter The Number: 2
First three powers = 2 ,4 ,8
```

Ques. Find the greatest among three numbers.

```c
#include <stdio.h>
int main()
{
    int n1, n2, n3;
    printf("Enter three different numbers: ");
    scanf("%d %d %d", &n1, &n2, &n3);
    if (n1 >= n2 && n1 >= n3)
    {
        printf("%d is the largest number.", n1);
    }
    if (n2 >= n1 && n2 >= n3)
    {
        printf("%d is the largest number.", n2);
    }
    if (n3 >= n1 && n3 >= n2)
    {
        printf("%d is the largest number.", n3);
    }
    return 0;
}
```

Output

```
/tmp/ZbEVdGgM9u.o
Enter three different numbers: 34 76 89
89 is the largest number.
```

Ques. Checking whether you are eligible for voting.

```c
#include <stdio.h>
int main()
{
    int age;
    printf("Enter age : ");
    scanf("%d", &age);
    if (age >= 18)
        printf("You can Vote!");
    else
        printf("You can't Vote!");
    return 0;
}
```

Output

```
/tmp/ZbEVdGgM9u.o
Enter age : 24
You can Vote!
```

Ques. Program for finding greater between two.

```c
#include <stdio.h>
int main()
{
    int num1, num2;
    printf("Enter two different numbers: ");
    scanf("%d %d", &num1, &num2);
    if (num1 == num2)
    {
        printf("both are equal");
    }
    if (num1 > num2)
    {
        printf("%d is greater", num1);
    }
    else
    {
        printf("%d is greater", num2);
    }
    return 0;
}
```

Output

```
/tmp/ZbEVdGgM9u.o
Enter two different numbers: 3 6
6 is greater
```

Ques. Checking whether number is even or odd.

```c
#include <stdio.h>
int main()
{
    int num;
    printf("Enter an integer: ");
    scanf("%d", &num);
    if(num % 2 == 0)
        printf("%d is even.", num);
    else
        printf("%d is odd.", num);
    return 0;
}
```

Output

```
/tmp/ZbEVdGgM9u.o
Enter an integer: 3
3 is odd.
```

Ques. Leap year program in C using if-else.

```c
#include <stdio.h>
int main()
{
    int year;
    printf("Enter a year: ");
    scanf("%d", &year);
    if (year % 4 == 0) {
      printf("%d is a leap year.", year);
   }
    else {
      printf("%d is not a leap year.", year);
   }
    return 0;
}
```

Output

```
/tmp/ZbEVdGgM9u.o
Enter a year: 1996
1996 is a leap year.
```

Ques.C program to reverse a number using FOR loop.

```c
#include <stdio.h>
int main()
{
    int n, reverse=0, rem=0;
    printf("Enter an integer: ");
    scanf("%d", &n);
    while (n > 0)
    {
        rem = n % 10;
        reverse = reverse * 10 + rem;
        n = n/10;
    }
    printf("Reversed number = %d", reverse);
    return 0;
}
```

Output

```
/tmp/ZbEVdGgM9u.o
Enter an integer: 568
Reversed number = 865
```

Ques. Program of Armstrong number in C using FOR & While loop.

```c
#include <stdio.h>
int main()
{
    int num, r, sum = 0,a;
    printf("Input  any number: ");
    scanf("%d", &num);
    for (a = num; num != 0; num = num / 10)
    {
        r = num % 10;
        sum = sum + (r *r *r);
    }

    if (sum == a)
        printf("%d is an Armstrong number.\n", a);
    else
        printf("%d is not an Armstrong number.\n", a);
    return 0;
}
```

Output

```
/tmp/ZbEVdGgM9u.o
Input  any number: 153
153 is an Armstrong number.
```

Ques. Calculate the sum of natural numbers using while loop.

```c
#include <stdio.h>
int main()
{
    int n, i, sum = 0;
    printf("Enter a positive integer: ");
    scanf("%d", &n);
    i = 1;
    while (i <= n)
    {
        sum = sum+i;
        i=i+1;
    }
    printf("Sum = %d", sum);
    return 0;
}
```

Output

```
/tmp/ZbEVdGgM9u.o
Enter a positive integer: 10
Sum = 55
```

Ques. C program to print the multiplication table of N.

```c
#include <stdio.h>
int main()
{
    int n;
    printf("Enter an integer: ");
    scanf("%d", &n);
    for (int i = 1; i <= 10; i++)
    {
        printf("%d * %d = %d \n", n, i, n * i);
    }
    return 0;
}
```

Output

```
/tmp/gMu4y2NeMR.o
Enter an integer: 5
5 * 1 = 5
5 * 2 = 10
5 * 3 = 15
5 * 4 = 20
5 * 5 = 25
5 * 6 = 30
5 * 7 = 35
5 * 8 = 40
5 * 9 = 45
5 * 10 = 50
```

Ques. Fibonacci series program using DO WHILE loop.

```c
#include <stdio.h>
int main()
{
    int i=1,n,f,f1,f2;
    printf("Enter Number of Fibonacci Values Needed : ");
    scanf("%d",&n);
    f=0;
    f1=1;
    f2=1;
    do
    {
        i++;
        printf("%d\n",f);
        f1=f2;
        f2=f;
        f=f1+f2;
    }
    while(i<=n);
    return 0;
}
```

```
Output
/tmp/gMu4y2NeMR.o
Enter Number of Fibonacci Values Needed : 5
0
1
1
2
3
```

Ques. Find GCD of two numbers.

```c
#include <stdio.h>
int main()
{
    int n1, n2, i, gcd;
    printf("Enter two integers: ");
    scanf("%d %d", &n1, &n2);
    for(i=1; i <= n1 && i <= n2; i++)
    {
        if(n1%i==0 && n2%i==0)
            gcd = i;
    }
    printf("G.C.D of %d and %d is %d", n1, n2, gcd);
    return 0;
}
```

Output

```
/tmp/gMu4y2NeMR.o
Enter two integers: 45 87
G.C.D of 45 and 87 is 3
```

Ques. Program to find LCM of two numbers.

```c
#include <stdio.h>
int main()
{
    int n1, n2, max;
    printf("Enter two positive integers: ");
    scanf("%d %d", &n1, &n2);
    max = (n1 > n2) ? n1 : n2;
    while (1)
    {
        if ((max % n1 == 0) && (max % n2 == 0))
        {
            printf("The LCM of %d and %d is %d.", n1, n2, max);
            break;
        }
        max++;
    }
    return 0;
}
```

Output

```
/tmp/gMu4y2NeMR.o
Enter two positive integers: 24 36
The LCM of 24 and 36 is 72.
```

Ques. Palindrome program in C using While loop.

```c
#include <stdio.h>
int main()
{
    int n, reverse = 0, rem, temp;
    printf("Enter Number to Check Palindrome Number or Not:\n");
    scanf("%d", & n);
    temp = n;
    while (temp != 0)
    {
        rem = temp % 10;
        reverse = reverse * 10 + rem;
        temp /= 10;
    }
    if (reverse == n)
    printf("%d is a Palindrome Number.", n);
    else
    printf("%d is Not a Palindrome Number.", n);
    return 0;
}
```

Output

```
/tmp/gMu4y2NeMR.o
Enter Number to Check Palindrome Number or Not:
23432
23432 is a Palindrome Number.
```

Ques. Count the number of digits of an integer.

```c
#include <stdio.h>
int main()
{
    int n,count=0;
    printf("Enter a number: ");
    scanf("%d",&n);
    while(n!=0)
    {
       n=n/10;
       count++;
    }
    printf("\nThe number of digits is : %d",count);
    return 0;
}
```

Output

```
/tmp/McywOzUYaz.o
Enter a number: 3574
The number of digits is : 4
```

Ques. C program to print day of week name using switch case.

```c
#include <stdio.h>
int main()
{
    int day;
    printf("Enter Day Number(1-7) : ");
    scanf("%d", &day);
    switch(day)
    {
        case 1 : printf("Monday\n");
            break;
        case 2 : printf("Tuesday\n");
            break;
        case 3 : printf("Wednesday\n");
            break;
        case 4 : printf("Thursday\n");
            break;
        case 5 : printf("Friday\n");
            break;
        case 6 : printf("Saturday\n");
            break;
        case 7 : printf("Sunday\n");
            break;
        default: printf("Invalid Input !!!!\n");
    }
    return 0;
```

Output

```
/tmp/McywOzUYaz.o
Enter Day Number(1-7) : 5
Friday
```

Ques. C program to make a simple calculator using switch case.

```c
#include <stdio.h>
int main()
{
    char op;
    double n1, n2;
    printf("Enter an operator (+, -, *, /): ");
    scanf("%c", &op);
    printf("Enter two operands: ");
    scanf("%lf %lf", &n1, &n2);
    switch (op) {
        case '+':
            printf("%.1lf + %.1lf = %.1lf", n1,n2,n1+n2);
            break;
        case '-':
            printf("%.1lf - %.1lf = %.1lf", n1,n2,n1-n2);
            break;
        case '*':
            printf("%.1lf * %.1lf = %.1lf", n1,n2,n1*n2);
            break;
        case '/':
            printf("%.1lf / %.1lf = %.1lf", n1,n2,n1/n2);
            break;
        default:
            printf("Error! operator is not correct");
    }
    return 0;
}
```

Output

```
/tmp/aqP5wniSTh.o
Enter an operator (+, -, *, /): *
Enter two operands: 3 6
3.0 * 6.0 = 18.0
```

Ques. C program to find grade of a student using switch case.

```c
{
    int marks;
    printf("\nEnter The Marks : ");
    scanf("%d", &marks);
    switch(marks/10)
    {
       case 10 :
       case 9 :
           printf("\n Your Grade is: A");
           break;
       case 8 :
           printf("\n Your Grade is: B" );
           break;
       case 7 :
           printf("\n Your Grade is: C" );
           break;
       case 6 :
           printf("\n Your Grade is: D" );
           break;
       case 5 :
           printf("\n Your Grade is: E" );
           break;
       case 4 :
           printf("\n Your Grade is: E--");
           break;
       default :
           printf("\n You Grade is: F or Fail\n");
    }
    return 0;
```

Output

```
/tmp/McywOzUYaz.o
Enter The Marks : 78
Your Grade is: C
```