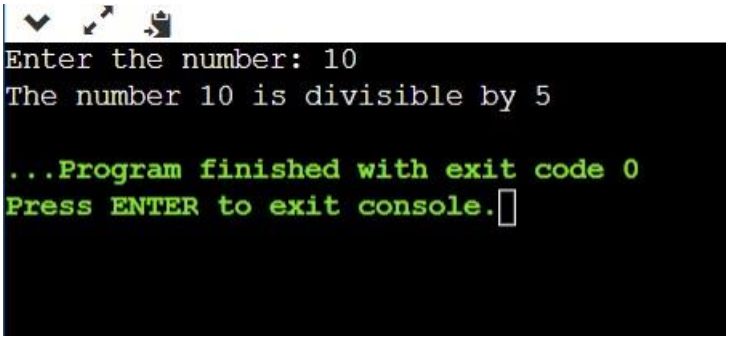
Computer Programming Lab – 2

1. Write a program to print if number is divisible by 3 or 5 or both. Input should be given by user.

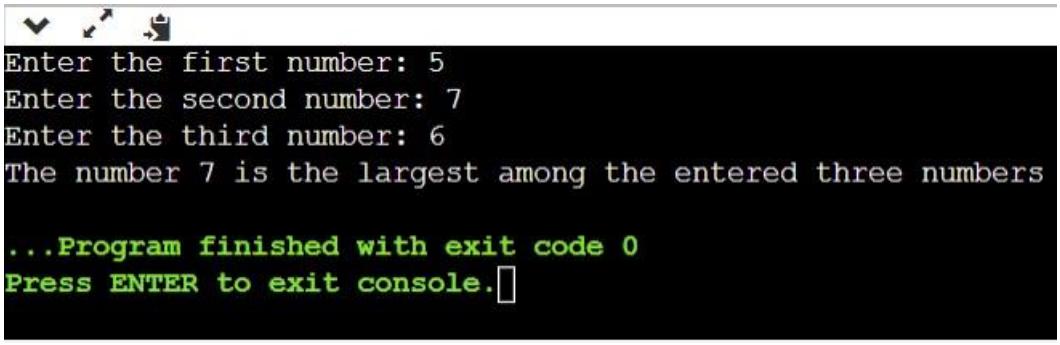
```
#include <stdio.h>

int main()
{
   int num;
   printf("Enter the number: ");
   scanf("%d", &num);
   if (num%3 == 0 && num%5 ==0)
   printf("The number %d is divisible by both 3 and 5", num);
   else if (num%3 == 0)
   printf("The number %d is divisible by 3", num);
   else if (num%5 == 0)
   printf("The number %d is divisible by 5", num);
   else
   printf("The number %d is neither divisible by 3 nor 5", num);
   return 0;
}
```



2. Write a program to print to find largest of three given numbers. Input should be given by user.

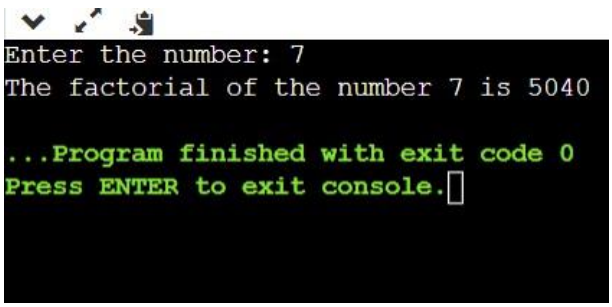
```
#include <stdio.h>

int main()
{
   int num1, num2, num3;
   printf("Enter the first number: ");
   scanf("%d", &num1);
```

```
   printf("Enter the second number: ");
   scanf("%d", &num2);
   printf("Enter the third number: ");
   scanf("%d", &num3);
   if (num1>num2 && num1>num3)
   printf("The number %d is the largest among the entered three numbers", num1);
   else if (num2>num1 && num2>num3)
   printf("The number %d is the largest among the entered three numbers", num2);
   else
   printf("The number %d is the largest among the entered three numbers", num3);
   return 0;
}
```



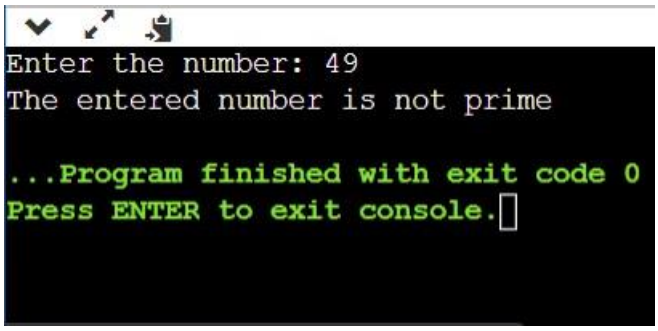
3. Write a program to find factorial of a number.

```
#include <stdio.h>

int main()
{
   int num, i, fact=1;
   printf("Enter the number: ");
   scanf("%d", &num);
   for (i=1; i<=num; i++)
   {
      fact = fact*i;
   }
   printf("The factorial of the number %d is %d", num, fact);
   return 0;
}
```



4. Write a program to check if a number is prime or not.

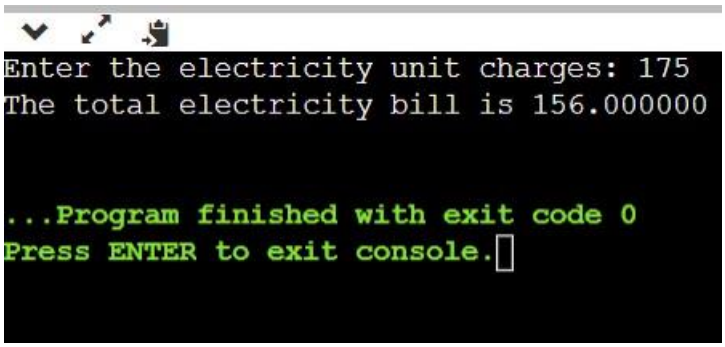
```
#include <stdio.h>

int main()
{
   int  num, i, c=0;
   printf("Enter the number: ");
   scanf("%d", &num);
   if (num >=1)
   for (i=2; i<=num; i++)
   {
      if (num%i == 0)
      {
      printf("The entered number is not prime");
      c=1;
      break;
      }
   }
      if (c == 0)
      printf("The entered number is prime");
   return 0;
}
```



5. Write a C program to input electricity unit charges and calculate total electricity bill according to the given condition: For first 50 units Rs. 0.50/unit For next 100 units Rs. 0.75/unit For next 100 units Rs. 1.20/unit For unit above 250 Rs. 1.50/unit An additional surcharge of 20% is added to the bill. Take number of units from user

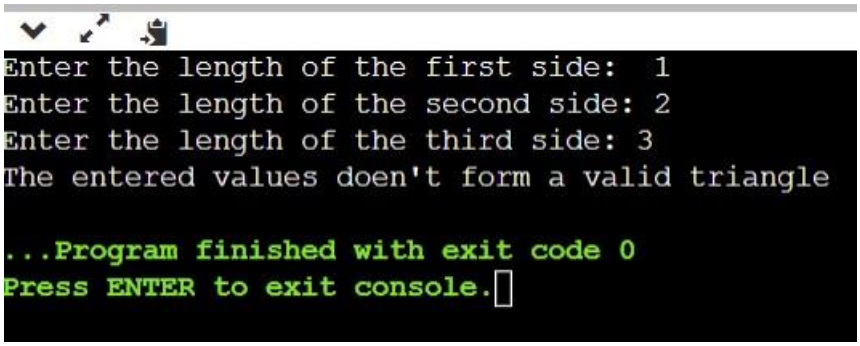
```
#include <stdio.h>

int main()
{
   int unit;
   float bill, cost;
```

```
    printf("Enter the electricity unit charges: ");
    scanf("%d", &unit);
    if (unit<=50)
    {
    bill = unit*0.50;
    cost = bill + (bill*0.2);
    printf("The total electricity bill is %f\n", cost);
    }

    else if (unit>50 && unit<=150)
    {
    bill = (50*0.5)+ ((unit-50)*0.75);
    cost = bill + (bill*0.2);
    printf("The total electricity bill is %f\n", cost);
    }

    else if (unit>150 && unit<=250)
    {
    bill = (50*0.5)+ (100*0.75)+ ((unit-150)*1.20);
    cost = bill + (bill*0.2);
    printf("The total electricity bill is %f\n", cost);
    }

    else if (unit>250)
    {
    bill = (50*0.5)+ (100*0.75)+ (100*1.2)+ ((unit-250)*1.50);
    cost = bill + (bill*0.2);
    printf("The total electricity bill is %f\n", cost);
    }
    return 0;
}
```



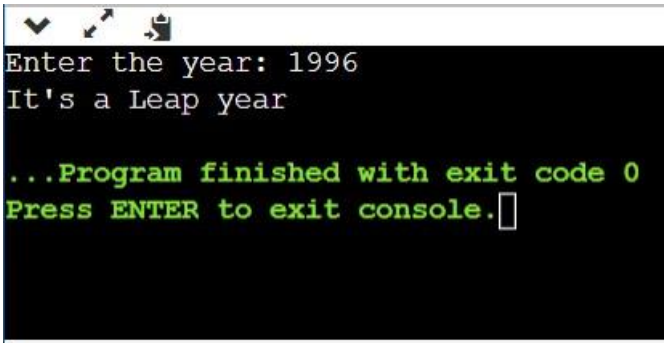
6. Write a program to check whether a triangle is valid. If valid, find if it is isosceles, equilateral, or scalene.

```c
#include <stdio.h>

int main()
{
   float a,b,c;
   printf("Enter the length of the first side:  ");
   scanf("%f", &a);
   printf("Enter the length of the second side: ");
   scanf("%f", &b);
   printf("Enter the length of the third side: ");
   scanf("%f", &c);
   if ( ((a+b)>c) && ((b+c)>a) )
   {
      if (a == b && b == c)
      {
      printf("It's a equilateral triangle");
      }
      else if ( a== b || b == c || c == a)
      {
      printf("It's a isosceles triangle");
      }
      else
      {
      printf("It's a scalene triangle");
      }
   }
   else
   printf("The entered values doen't form a valid triangle");

   return 0;
}
```



7. Write a program to find whether a given year is leap or not. Year is provided by user. NOTE: A year is leap if it is divisible by 4 and not divisible by 100. A year is also leap if it is divisible by 400.

```
#include <stdio.h>

int main()
{
   int year;
   printf("Enter the year: ");
   scanf("%d", &year);
   if (year%400 == 0)
   {
      printf("It's a Leap year");
   }
   else if (year%4 == 0 && year%100 != 0)
   {
       printf("It's a Leap year");
   }
   else
   {
      printf("It's not a Leap year");
   }
   return 0;
}
```



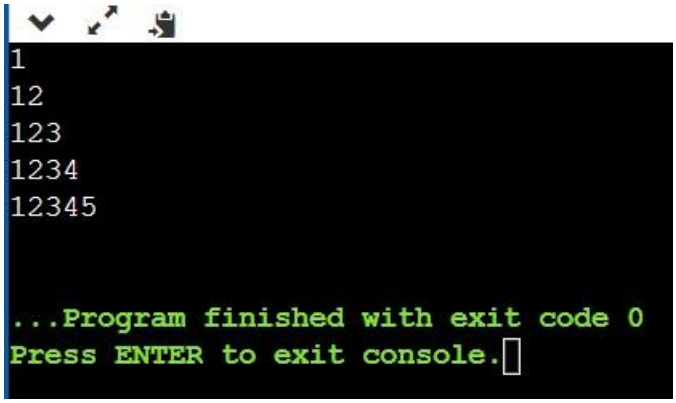
Write program to print following patterns.

8.

```
    1
    12
    123
    1234
   12345
```

```
#include<stdio.h>

int main()
```

```
{
   int i, j;
   for (i=1; i<=5; i++)
   {
     for (j=1; j<=i; j++)
   {
      printf("%d", j);
   }
   printf("\n");
   }

   return 0;
}
```

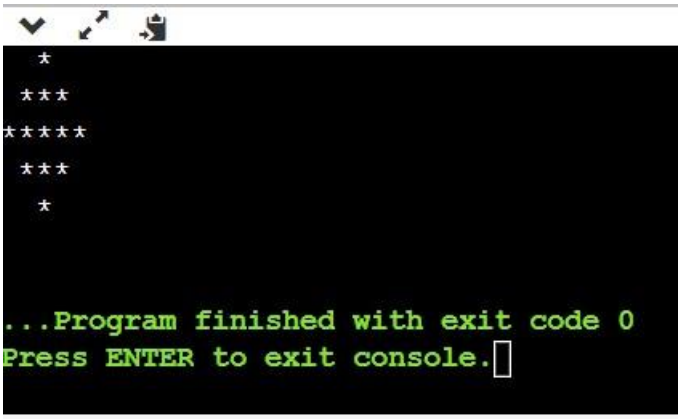


9.

```
    *
   ***
  *****
   ***
    *
```

```
#include <stdio.h>

int main()
{
   int i,j;
   for(i=1; i<=5; i++)
   {
      for(j=1; j<=5; j++)
      {
      if(i == 3 || j == 3)
      printf("*");
```

```
      else if ((i == 2 || i == 4) && (j == 4 || j == 2))
      printf("*");
      else
      printf(" ");
      }
   printf("\n");

   }


   return 0;
}
```



10.

```
#include <stdio.h>

int main()
{
   int i,j,a;
   for(i=1; i<=9; i++){
      a = i;
      if (i>5)
      a = 10-i;
      for (j=1; j<=9; j++){
         if (i == j)
         printf("%d", a);
         else if (i+j == 10)
         printf("%d", a);
         else
         printf(" ");
      }
```

```
    printf("\n");
    }

    return 0;
}
```