Computer Programming(Sem-1)

1. Motivational videos on programming.

Ans:- "Everybody in this country should learn how to program a computer because it teaches you how to think".
-Steve Jobs

"you don't have to be genius to know how to code you need to be determined." As we all know computers are everywhere if you want to work in agriculture, entertainment, building a house it just all over, all things turned upside down by software. Now a days everything depends on computers.

"Our policy is literally to hire as many talented engineers as we can find".
-Mark Zuckerberg

To be able to actually come up with an idea and then see it in your hands and then be able to press a button and have it be in millions of people's hands. I mean i think we're the first generation in the world that's really ever had that kind of experience. The programmers of tomorrow are the wizards of the future, you know we are gonna look like you have magic power compared to everybody else its amazing i think its the closest thing we have to be a superpower.

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2. Introduction to C++/Code blocks/Visual stdio code.

Ans:- Turbo C++ :- Its a discontinued C++ compiler and integrated development envionment originally from Borland. It was designed as a home and hobbyist counterpart for Borland C++. As the developer focused more on professional programming tools later Turbo C++ product were made as scaled down version of its professional compiler.

- Developer – Borland
- Initial release – May 1990
- Type – IDE

Code Blocks :- It is a free, open source cross platform IDE that supports multiple compiler including GCC, clang, visual C++. It is developed in C++ using wx-widgets as the GUI toolkits, using a plugin architecture, its capability and features are defined by the provided plugin.

- Developer – The code block team
- Initial release – 2005
- Type – IDE

Visual Studio code :- It is a source code editor made by Microsoft with the electron framework for windows, linux and macos. Features including supports for debugging , syntax highlighting , intelligent code completion snippets, code refactoring and embedded git, users can change the theme , keyboard shortcuts , preference and install extentions that add additional functionality.

- Developer – Microsoft
- Initial release – 2015
- Type – Source code editor

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3. Develop a program to print “Hello world”.

Code:- #include<stdio.h>
int main (){
printf (“Hello world\n”):
return 0;
}

---

4. Develop a program to print your address (i) using single printf (ii) using multiple printf.

Code:- (i) using single printf

```
#include<stdio.h>
int main (){
printf (“Address:- Locality, City, Pin code, State, Country\n”);
return 0;
}
```

(ii) using multiple printf

```
#include<stdio.h>
int main (){
printf (“Address:- Locality\n”);
printf (“City\n”);
printf (“Pin code\n”);
printf (“State\n”);
printf (“Country\n”);
```

---

5. Develop a program to print addition of 2 numbers (with scanf).

Code:-

```
#include<stdio.h>
int main (){
int a, b, sum;
printf (“Enter the value of a: “);
scanf (“%d”, &a);

printf (“Enter the value of b: “);
scanf (“%d”, &b);

sum = a + b;

printf (“Addition of %d and %d is %d\n”, a, b, sum);
return 0;
}
```

---

6. Develop a program to convert temperature from Fahrenheit to celcius, Hint: C = ((F-32)*5)/9.

Code:-

```
#include<stdio.h>
int main (){
float temF, temC;
```

```
printf (“Enter the temperature in Fahrenheit\n”);
scanf (“%d”, &temF);

temC = ((temF – 32)*5)/9;

printf (“%d Fahrenheit is %d Celcius\n”, temF, temC);
return 0;
}
```

---

7. Develop a program to find percentage of 5 subjects.

Code:-

```
#include<stdio.h>
int main (){
int s1, s2, s3, s4, s5, total = 500, sum;

printf(“Enter the marks of subjects 1\n”);
scanf (“%d”, &s1);

printf(“Enter the marks of subjects 2\n”);
scanf (“%d”, &s2);

printf(“Enter the marks of subjects 3\n”);
scanf (“%d”, &s3);

printf(“Enter the marks of subjects 4\n”);
scanf (“%d”, &s4);

printf(“Enter the marks of subjects 5\n”);
scanf (“%d”, &s5);

sum = s1+s2+s3+s4+s5;
float per = (sum*100)/total;

printf(“Percentage of five subjects is %f\n”, per);
return 0;
}
```

---

8. Develop a program to convert seconds into hours, minute & seconds print in HH:MM:SS (Eg- 2:46:40).

Code:-

```
#include<stdio.h>
int main (){
int sec, time, hour, min;
printf(“Enter seconds you want to convert\n”);
scanf (“%d”, &time);
hour = time/3600;
min = time/60;
sec = time % 60;
min = min % 60;
```

```
printf ("%d hours %d minute %d seconds\n", hour, min, sec);
return 0;
}
```

---

9. Develop a program to check whether the given number is positive or negative.(using simple if)

Code:-

```
#include<stdio.h>
int main (){
int n;
printf ("Enter a number\n");
scanf ("%d", &n);

if(n>0){
printf ("Its a positive number\n");
}
if(n<0){
printf ("Its a negative number\n");
}
return 0;
}
```

---

10. Develop a program to find out largest number from given three number using logical operator (&&).

Code:-

```
#include<stdio.h>
int main(){
int num1, num2, num3;

printf ("Enter the value of 1st , 2nd and 3rd number respectively\n");
scanf ("%d %d %d", &num1, &num2, &num3);

if (num1>num2 && num1>num3){
printf ("1st number is largest\n");
}
else if (num2>num1 && num2>num3){
printf ("2nd number is largest\n");
}
else
printf ("3rd number is largest\n");
return 0;
}
```

---

11. Develop a program to check whether the given number is positive or negative.(using if...else...)

Code:-

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

```
printf (“Enter a number\n”);
scanf (“%d”, &n);

if (n>0){
printf (“Positive number\n”);
}
else if (n==0){
printf (“Your input is zero\n”);
}
else
printf (“Negative number\n”);
return 0;
}
```

---

12. Develop a program to find out largest number from given three numbers without using logical operator(&&). (using nested if)

Code:-

```
#include<stdio.h>
int main (){
int n1, n2, n3;

printf ("Enter your 1st number\n");
scanf ("%d", &n1);
printf ("Enter your 2nd number\n");
scanf ("%d", &n2);
printf ("Enter your 3rd number\n");
scanf ("%d", &n3);

if (n1>n2){
        if (n1>n3){
        printf ("Number 1st is greatest which is %d\n", n1);
         }
}
else if (n2>n1)
        {
         if (n2>n3)
        {
        printf ("Number 2nd is greatest which is %d\n", n2);
         }
}
 else
 printf ("Number 3rd is greatest which is %d\n", n3);
 return 0;
}
```

---

13. Develop a program to check whether the given number is leap year or not. (If a year can be divisible by 4 but not divisible by 100 then it is leap year but if it is divisible by 400 then it is leap year). (Using if...else if... else...)

Code:-
```
#include<stdio.h>
int main () {
int n;
printf (“Enter a year: “);
scanf (“%d”, &n);

if(n%4==0 && n%100 !=0){
printf (“Its a leap year\n”);
}
else if (n%400 == 0){
printf (“Its a leap year\n”);
}
else
printf (“Its not a leap year\n”);
return 0;
}
```

---

14. Develop a program to perform addition, subtraction, multiplication and division of 2 numbers as per user's choice.

Code:-
```
#include<stdio.h>
int main () {
int n1, n2, ch;
printf (“Enter your 1st number: “);
scanf (“%d”, &n1);
printf (“Enter your 2nd number: “);
scanf (“%d”, &n2);

printf (“Enter what operation you want to perform\n”);
printf (“1 for Addition, 2 for Subtraction, 3 for Multiplication and 4 for Division\n”);

scanf (“%d”, &ch);
switch (ch){
case 1:
printf (“%d + %d = %d\n”, n1, n2, n1+n2);
break;
case 2:
printf (“%d - %d = %d\n”, n1, n2, n1-n2);
break;
case 3:
printf (“%d * %d = %d\n”, n1, n2, n1*n2);
break;
case 4:
if(n2>0){
printf (“%d / %d = %d\n”, n1, n2, n1/n2);
break;
default:
printf (“You entered an invalid input\n”);
break;
```

```
}
return 0;
}
```

---

15. Three sides of triangle are entered through the keyboard develop a program to check whether the triangle is isoscles, equilateral, scalene or right angled triangle.

Code:-

```
#include<stdio.h>
int main () {
int s1, s2, s3;
printf (“Enter 1st side: “);
scanf (“%d”, &s1);
printf (“Enter 2nd side: “);
scanf (“%d”, &s2);
printf (“Enter 3rd side: “);
scanf (“%d”, &s3);

if(s1 == s2 && s2 == s3){
   printf (“This is equilateral triangle\n”);
}
else if (s1 == 90 || s2 == 90 || s3 == 90){
   printf (“This is right angled triangle\n”);
}
else if (s1 == s2 || s2 == s3 || s3 == s1){
   printf (“This is isoscles triangle\n”);
}
else if (s1 != s2 && s2 != s3 && s3 != s1){
   printf (“This is scalena triangle\n”);
}
else
printf (“This is other types of triangle\n”);
return 0;
}
```

---

16. Develop a program to find out largest number from given 2 numbers. (using exp? exp2: exp3)

Code:-

```
#include<stdio.h>
int main (){
int n1, n2, lar;

printf (“Enter your 1st number: “);
scanf (“%d”, &n1);
printf (“Enter your 2nd number: “);
scanf (“%d”, &n2);
lar = n1;
(lar < n2 ? Lar = n2 : lar);
printf (“%d is largest\n”, lar);
return 0;
```

```
}
```

---

17. Develop a program to read 3 number, multiply largest number from first two numbers to third one.

Code:-

```
#include<stdio.h>
    int main () {
    int n1, n2, n3, lar;
    printf (“Enter your 1st number: “);
    scanf (“%d”, &n1);
    printf (“Enter your 2nd number: “);
    scanf (“%d”, &n2);
    printf (“Enter your 3rd number: “);
    scanf (“%d”, &n3);

    lar = n1;
    (lar < n2 ? lar = n2 : lar);
      (lar < n3 ? lar = n3 : lar);
    printf (“%d is largest\n”, lar);
    n1 = n1*lar;
    n2 = n2*lar;
    n3 = n3*lar;

    printf (“After multiplying the largest number to all\n”);
    printf (“1st number = %d\n 2nd number = %d\n 3rd number = %d\n”, n1, n2, n3);
    return 0;
    }
```

---

18. Develop a program to print day name based on day number.

Code:-

```
#include<stdio.h>
    int main (){
    int n;
    printf (“Enter day number: “);
    scanf (“%d”, &n);

    switch (n){
        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 (“Your input is invalid\n”);
  break;
}
return 0;
}
```

---

19. Develop a program to print 1 to 10.

Code:-

```
#include<stdio.h>
int main () {
for(int i = 1; i <=10; i++){
printf (“%d\n”, i);
}
return 0;
}
```

---

20. Develop a program to find factorial of the given number.

Code:-

```
#include<stdio.h>
int main () {
int n, a, b, count, temp;
printf (“Enter a number to find factorial of: “);
scanf (“%d”, &n);

count =2;
a =0;
b =1;
while(count <=n){
  temp = b;
  b = a+b;
  a = temp;
  count++;
}
printf (“%d\n”, b);
return 0;
}
```

---

21. Develop a program to find whether the given number is prime or not using break.

Code:-
```
#include<stdio.h>
int main (){
int n, i, count =0;
printf (“enter a number\n”);
scanf (“%d”, &n);

for (i = 2; i<n/2; i++){
   if(n%i==0){
        count++;
        }
}
if(count == 0){
        printf (“prime number\n”);
        }
else
        printf (“Not a prime number\n”);
return 0;
}
```

---

22. Develop a program to print digits of given number.

Code:-
```
#include<stdio.h>
int main () {
        int n, count = 0;
        printf (“Enter a number\n”);
        scanf (“%d”, &n);

        while(n!=0){
                ++count;
                n=n/10;
        }
        printf (“%d\n”, count);
        return 0;
        }
```

---

23. Develop a program to check whether the given number is palindrome or not.

Code:-
```
#include<stdio.h>
int main () {
        int n, ans = 0, rem;
        printf (“Enter a number\n”);
        scanf (“%d”, &n);
int temp = n;
        while (n>0){
                rem = n%10;
                n = n/10;
                ans = ans*10+rem;
        }
```

```
if(temp  ==ans){
        printf (“palindrome number\n”);
}
else
        printf (“Not palindrome\n”);
return 0;
}
```

---

24. Develop a program to check whether the given number is Armstrong or not.

Code:-

```
#include<stdio.h>
    int main (){
        int n, rem, sum =0, temp;
        printf (“Enter a number\n”);
        scanf (“%d”, &n);
        temp = n;
        while(n != 0){
                rem = n%10;
                sum = sum +rem*rem*rem:
                n= n/10;
        }
        if(temp == sum){
                printf (“Armstrong\n”);
        }
        else
                printf (“Not armstrong\n”);
        return 0;
        }
```

---

25. Develop a program to print number from 1 to 10.(using while loop)

Code:-

```
#include<stdio.h>
    int main (){
        int n=1;
        while (n<=10){
                printf (“%d\n”, n);
                n++;
                }
        return 0;
        }
```

---

26. Develop a program to print odd number from 1 to n.

Code:-

```
#include<stdio.h>
    int main () {
    int n;
    printf (“Enter a number\n”);
    scanf (“%d”, &n);
```

```
for (int i = 1; i<=10; i++){
        if(i%2==0){
                printf (“%d\n”, i);
        }
}
return 0;
}
```

---

27. Develop a program to calculate the sum of first n natural number.

Code:-

```
#include<stdio.h>
int main () {
        int n, sum=0;
        printf (“Enter a number\n”);
        scanf (“%d”, &n);

        for(int i = 1; i<=n; i++){
                sum = sum+i;
        }
        printf (“%d\n”, sum);
        return 0;
        }
```

---

28. Develop a program to display the n terms of odd natural number and their sum.

Code:-

```
#include<stdio.h>

 int main(){
 int n, sum=0;
 printf ("Enter a number\n");
 scanf ("%d", &n);
 for (int i = 1; i <= n; i++)
 {
  if (i%2!=0)
  {
   printf ("%d\n", i);
   sum = sum + i;
  }

 }
 printf ("Sum of %d odd natural number is %d\n", n, sum);
 return 0;
}
```

---

29. Develop a program to find factorial of the given number.

Code:-

```
#include<stdio.h>
```

```
 int main(){
 int n;
 printf ("Enter a number\n");
 scanf ("%d", &n);
 for (int i = 1; i <= n; i++)
 {
  if (n%i==0)
  {
    printf ("%d\n", i);
  }

 }

 return 0;
}
```

---

30. Develop a program to find the sum of 1 + (1+2) + (1+2+3) + (1+2+3+4)+....+(1+2+3+n).

Code:-

```
#include<stdio.h>

   int main(){
   int n, sum, sum1=0;
   printf ("Enter n\n");
   scanf ("%d", &n);
   for (int i = 1; i <=n; i++)
   {
      sum=0;
      for (int j = 1; i <=i; j++)
      {
        sum = sum+j;
      }
      sum1=sum1+sum;
   }
   printf ("The result is %d\n", sum1);
   return 0;
}
```

---

31. Develop a program to compute the value of e^x by using the formula. e^x = 1 + x/1! + x^2/2! + x^3/3! + ...

Code:-

```
#include<stdio.h>
#include<math.h>
   int main(){
   int n, x, fact=1;
   printf ("Enter the value of x\n");
   scanf("%d", &x);

   printf ("Enter the value of n\n");
   scanf("%d", &n);
   float sum =0;
   for (int i = 1; i <=n; i++)
```

```
    {
       fact *=i;
       sum = sum+(pow(x,i)/(fact));
    }
    sum++;
    printf ("The result is %f\n", sum);
    return 0;
}
```

---

32. Develop a program to find out prime numbers between given two numbers.

Code:-

```
#include<stdio.h>

    int main(){
    int n1, n2, count;
    printf ("Enter the value of n1\n");
    scanf ("%d", &n1);
    printf ("Enter the value of n2\n");
    scanf ("%d", &n2);

    for (int i = n1+1; i < n2; i++)
    {
       count=0;
       for (int j = 2; j < i; j++)
       {
          if (i%j==0)
          {
             count=1;
             break;
          }

       }
       if (count==0)
       {
          printf ("%d\n", i);
       }
    }
    return 0;
}
```

---

33. Develop a program to display following pattern.

Code:-

(i)

```
#include<stdio.h>
    int main(){
      int n, t=1;
      printf ("Enter n: ");
      scanf ("%d", &n);
      for (int i = 1; i <=n; i++)
      {
```

```
            for (int j = 1; j <= i; j++)
             {
               printf ("%d", t);
                t++;
             }
           printf ("\n");
        }
      return 0;
      }
```

output:-

```
1
23
456
78910
```

(ii)

```
#include<stdio.h>
 int main(){
 int n, x, y;
 printf ("Enter the number of rows: ");
 scanf ("%d", &n);
 for (int i = 1; i <= n; i++)
 {
  if (i%2==0)
  {
   x = 1;
   y = 0;
  }
  else
  {
   x = 0;
   y = 1;
  }
  for (int j = 1; j <= i; j++)
  {
   if (j%2==0)
   {
    printf ("%d", x);
   }
   else
   {
    printf ("%d", y);
   }
  }
  printf ("\n");
 }

 return 0;
}
```

output:-

```
1
```

01
101
0101
10101
010101

(iii)

---

34. Develop a program to draw Pascal`s triangle.

Code:- #include<stdio.h>

```
int main(){
int n;
printf ("Enter the value of rows: ");
scanf ("%d", &n);

for (int i = 1; i <=n; i++)
{
  int a=1;
  for (int j = 1; j <=i; j++)
  {
   printf ("%d", a);
   a = a*(i - j)/j;
  }
  printf ("\n");
}

return 0;
}
```

---

35. Develop a program to count number of positive or negative number from an array of n number.

Code:- #include<stdio.h>

```
int main(){
int a[10], p=0, n=0;
for (int i = 0; i < 10; i++)
{
  printf ("Enter number: ");
  scanf ("%d", &a[i]);
  if (a[i]>=0)
  {
    p++;
  }
  else
  {
    n++;
  }
}
printf ("Total positive number: %d\n", p);
```

```
  printf ("Total negative number: %d\n", n);

  return 0;
}
```

---

36. Develop a program to read n numbers in an array and print them in reverse order.

Code:-

```
#include<stdio.h>

 int main(){
   int n;
 printf ("Enter size of array\n");
 scanf ("%d", &n);
 int a[n];
 for (int i = 1; i <= n; i++)
 {
   printf ("Enter the value of a[%d]: ", i);
   scanf ("%d", &a[i]);
 }
 for (int i = n; i >= 1; i--)
 {
   printf ("%d\t", a[i]);
 }

 return 0;
}
```

---

37. Develop a program to find Max, Min, Sum, Avg of given numbers from an array.

Code:-

```
#include<stdio.h>

 int main(){
 int n, max, min, sum=0;
 float avg;
 printf ("Enter size of array: ");
 scanf ("%d", &n);
 int a[n];

 for (int i = 0; i <n; i++)
 {
   printf ("Enter the value of a[%d]: ", i+1);
   scanf ("%d", &a[i]);
   sum = sum + a[i];
 }
 max= a[0];
 min = a[0];
 for (int i = 0; i < n; i++)
 {
   if (max<a[i])
   {
     max=a[i];
```

```
    }
    if (min>a[i])
    {
      min = a[i];
    }
  }

  avg = (float)sum/n;
  printf ("Max = %d\n", max);
  printf ("Min = %d\n", min);
  printf ("Sum = %d\n", sum);
  printf ("Avg = %f\n", avg);
  return 0;
}
```

---

38. Develop a program to sort elements of an array in an ascending order.

Code:-

```
#include<stdio.h>
 int main(){
 int n, temp=0;
 printf ("Enter the size of array: ");
 scanf ("%d", &n);

 int a[n];
 for (int i = 0; i < n; i++)
 {
  printf ("Enter the value of a[%d]: ", i);
  scanf ("%d", &a[i]);
 }

 for (int i = 0; i < n-1; i++)
 {
  for (int j = i+1; j < n; j++)
  {
   if (a[i]>a[j])
   {
    temp = a[i];
    a[i] = a[j];
    a[j] = temp;
   }
  }
 }

 printf ("Array in ascending order\n");
 for (int i = 0; i < n; i++)
 {
  printf ("%d\n", a[i]);
 }

 return 0;
}
```

---

39. Develop a program to read values in two dimensional array and print them in matrix form.

Code:- #include<stdio.h>

```
int main(){
int a[3][3];
for (int i = 0; i < 3; i++)
{
  for (int j = 0; j < 3; j++)
  {
    printf ("Enter the value at a[%d][%d]: ", i, j);
    scanf ("%d", &a[i][j]);
  }
}
printf ("Printing in Matrix form\n\n");

for (int i = 0; i < 3; i++)
{
  for (int j = 0; j < 3; j++)
  {
    printf ("%d\t", a[i][j]);
  }
  printf ("\n\n");
}

return 0;
}
```

---

40. Develop a program to count number of positive, negative and zero elements from 3 X 3 matrix.

Code:- #include<stdio.h>

```
int main(){
int a[3][3], p=0, n=0, z=0;
for (int i = 0; i < 3; i++)
{
  for (int j = 0; j < 3; j++)
  {
    printf ("Enter the value at a[%d][%d]: ", i, j);
    scanf ("%d", &a[i][j]);
    if (a[i][j]>0)
    {
      p++;
    }
    else if (a[i][j]<0)
    {
      n++;
    }
```

```
    else
    {
      z++;
    }

  }
 }

 printf ("Positive number: %d\n", p);
 printf ("Negative number: %d\n", n);
 printf ("No. of zero: %d\n", z);
 return 0;
}
```

---

41. Develop a program to perform addition of two matrices.

Code:-

```
#include<stdio.h>

 int main(){
 int a[3][3], b[3][3], c[3][3];

 printf ("\nEnter the value of A matrix\n");

 for (int i = 0; i <3; i++)
 {
  for (int j = 0; j <3; j++)
  {
    printf ("Enter the value at element a[%d][%d]: ", i, j);
    scanf ("%d", &a[i][j]);
  }

 }
 printf ("-------------------------------------\n");
 printf ("Enter the value of B matrix\n");

 for (int i = 0; i <3; i++)
 {
  for (int j = 0; j <3; j++)
  {
    printf ("Enter the value at element b[%d][%d]: ", i, j);
    scanf ("%d", &b[i][j]);
  }

 }
  printf ("-------------------------------------\n");
  printf ("Addition of matrix A and B is\n");

 for (int i = 0; i <3; i++)
 {
  for (int j = 0; j <3; j++)
  {
```

```
      c[i][j] = a[i][j] + b[i][j];
      printf ("%d\t", c[i][j]);
    }
    printf ("\n");
  }
  printf ("\n");
  return 0;
}
```

---

42. Develop a program to calculate the length of given string using strlen.

Code:- #include<stdio.h>

```
#include<string.h>
  int main(){
  char str[] = "Asif";
  printf ("Length of string = %d\n", strlen(str));
  return 0;
}
```

---

43. Develop a program to copy string using strcpy.

Code:- #include<stdio.h>

```
#include<string.h>
  int main(){
  char str[] = "Asif Alam";
  char str2[30];
  strcpy(str2, str);
  puts(str2);
  return 0;
}
```

---

44. Develop a program to compare two strings using strcmp.

Code:- #include<stdio.h>

```
#include<string.h>
  int main(){
  char str[] = "Asif Alam";
  char str2[] = "Kamran Alam";
  printf ("%d\n", strcmp(str, str2));
  return 0;
}
```

---

45. Develop a program to concatenate two strings using strcat.

Code:- #include<stdio.h>

```
#include<string.h>
  int main(){
  char str[] = "Asif ";
  char str2[] = "Alam";
  printf ("%s\n", strcat(str, str2));
  return 0;
```

```
}
```
---

46. Develop a program to reverse string using strrev.

```
Code:-   #include<stdio.h>
#include<string.h>
  int main(){
  char str[] = "ASIF";
  printf ("%s\n", strrev(str));
  return 0;
}
```
---

47. Develop a program to count simple interest using function.

```
Code:-  #include<stdio.h>

    // simple interest =  (P × R × T)/100

    void simple_interest();

    int main(){
    simple_interest();
    return 0;
}
void simple_interest(){
    float p,r,t;
    printf ("Enter principal amount: ");
    scanf ("%f", &p);
    printf ("Enter your rate of interest: ");
    scanf ("%f", &r);
    printf ("Enter time in years: ");
    scanf ("%f", &t);
    printf ("Simple interest is %f\n", (p*r*t)/100);
}
```
---

48. Develop a program to generate fibonacci series of N given number using function name fibbo. (e.g. 1 1 2 3 5 8 13 21 34 55.....)

```
Code:-  #include<stdio.h>

    void fibbo();

    int main(){
    fibbo();
    return 0;
}

void fibbo(){
    int n, a, b, temp;
    printf ("Enter n\n");
```

```
    scanf ("%d", &n);

    a = 0;
    b = 1;
    printf ("%d\t%d\t", a, b);
    for (int i = 2; i <=n-2; i++)
    {
        temp = b;
        b = a + b;
        a = temp;
        printf ("%d\t", b);
    }
}
```

---

49. Develop a program to find factorial of a given number using recursion.

Code:-

```
#include<stdio.h>
    int fact(int n){
        if (n==0)
        {
            return 1;
        }
        else
        {
            return (n*fact(n-1));
        }
    }

    int main(){
    int num;
    printf ("Enter a number: ");
    scanf ("%d", &num);
    printf ("Factorial of %d is %d\n", num, fact(num));
    return 0;
}
```

---

52. Develop a program to print value and address of a variable.

Code:-

```
#include<stdio.h>

    int main(){
    int n;
    int *ptr;
    printf ("Enter a number: ");
    scanf ("%d", &n);
    ptr = &n;

    printf ("The value of n is %d\n", *ptr);

    printf ("Address of n is %d\n", ptr);
```

```
    return 0;
}
```

---

53. Develop a program to swap value of two numbers using pointer.

Code:-
```
#include<stdio.h>
#include<stdlib.h>
    int main(){
    int a , b, *x, *y, temp;
    printf ("Enter the value of a and b\n");
    scanf ("%d %d", &a, &b);
    x = &a;
    y = &b;
    printf ("The value of a = %d and b = %d\n", a, b);
    temp = *x;
    *x = *y;
    *y = temp;
    printf ("\nAfter swaping\n\n");
    printf ("The value of a = %d and b = %d\n", a, b);
    return 0;
}
```

Completed