ASSIGNMENT 10

**1. Write a function to calculate the area of a circle. (TSRS)**

#include<stdio.h>

float AreaCircle (float);

int main ()

{

   float x, y;

   printf ("Enter radius of Circle");

   scanf ("%d”, &x);

   y=AreaCircle(x);

   printf ("Area is %f", y);

   return 0;

}

float AreaCircle (float r)

{

    float area;

    area=3.14\*r\*r;

    return area;

}

**2. Write a function to calculate simple interest. (TSRS)**

//Write a function to calculate simple interest. (TSRS)

#include<stdio.h>

float SimpleIntrest (float, float, float); //Function Declaration

// Function Definition

 float SimpleIntrest (float p, float r, float t)

{

    float si=0;

    si=(p\*r\*t)/100;

    return si;

}

int main ()

{

    float x, y, z, simpleInt=0;

    printf ("Enter Principal amount, Interest rate and time");

    scanf ("%f%f%f", &x, &y, &z);

    simpleInt= SimpleIntrest (x, y, z); // function call

    printf ("Simple interest is %f", simpleInt);

    return 0;

}

**3. Write a function to check whether a given number is even or odd. Return 1 if the number is even, otherwise return 0. (TSRS)**

#include<stdio.h>

int CheckEvenOdd (int);

 int CheckEvenOdd (int n)

{

    if(n%2==0)

      return 1;

    else

       return 0;

}

int main ()

{

    int x;

    printf ("Enter a Number:");

    scanf ("%d", &x);

    printf ("%d", CheckEvenOdd (x));

    return 0;

}

**4. Write a function to print first N natural numbers (TSRN)**

#include<stdio.h>

void PrintNatural (int);

void PrintNatural (int n)

{

    int i;

    for (i=1; i<=n; i++)

    {

        printf ("%d ", i);

    }

}

int main ()

{

    int x;

    printf ("Enter a number:");

    scanf ("%d", &x);

    PrintNatural(x);

    return 0;

}

**5. Write a function to print first N odd natural numbers. (TSRN)**

#include<stdio.h>

void PrintNodd (int);

void PrintNodd (int n)

{

    int i;

    for (i=1; i<=n; i++)

    {

        printf ("%d ", 2\*i-1);

    }

}

int main ()

{

    int x;

    printf ("Enter a Number:");

    scanf ("%d", &x);

    PrintNodd(x);

    return 0;

}

**6. Write a function to calculate the factorial of a number. (TSRS)**

#include<stdio.h>

int Factorial (int);

int Factorial (int x)

{

    int i, fact=1;

     for (i=1; i<=x; i++)

         fact = i\*fact;

    return fact;

}

int main ()

{

    int n;

    printf ("Enter a number:");

    scanf ("%d", &n);

    printf ("Factorial of the Number is: %d", Factorial(n));

    return 0;

}

**7. Write a function to calculate the number of combinations one can make from n items and r selected at a time. (TSRS)**

#include<stdio.h>

int NumOfArrangements (int, int);

int NumOfArrangements (int n, int r)

{

     int i, fact1=1, fact2=1, fact3=1, res=0;

     for (i=1; i<=n; i++)

        fact1 = fact1\*i;

     for (i=1; i<=r; i++)

        fact2 = fact2\*i;

     for (i=1; i<=n-r; i++)

        fact2 = fact2\*i;

   res = fact1/(fact2\*fact3);

   return res;

}

int main ()

{

    int x, y, z;

    printf ("Enter total items and no of items you want to select:");

    scanf ("%d%d", &x, &y);

    z=NumOfArrangements (x, y);

    printf ("Number of combination possible to select %d items out of %d items are %d", y, x, z);

    return 0;

}

**8. Write a function to calculate the number of arrangements one can make from n items and r selected at a time. (TSRS)**

#include <stdio.h>

int NumOfArrangement (int, int);

int NumOfArrangement (int n, int r)

{

    int fact1=1, fact2=1, i, res=0;

    for (i=1; i<=n; i++)

        fact1=fact1\*i;

    for (i=1; i<=n-r; i++)

        fact2=fact2\*i;

    res=fact1/fact2;

    return res;

}

int main ()

{

    int x, y;

    printf ("Enter total items and no of items want to select:");

    scanf ("%d%d", &x, &y);

    printf ("Number of arrangements from %d items by taking %d at a time is %d", x, y, NumOfArrangement (x, y));

    return 0;

}

**9. Write a function to check whether a given number contains a given digit or not. (TSRS)**

#include<stdio.h>

int CheckExistance (int, int);

int CheckExistance (int n, int d)

{

    int m;

    while (n)

    {

        m=n%10;

        if(m==d)

          return 1;

        else

          n=n/10;

    }

    return 0;

}

int main ()

{

    int num, digit, l;

    printf ("Enter a Number and a digit:");

    scanf ("%d%d", &num, &digit);

    l= CheckExistance (num, digit);

    if (l==1)

       printf ("Yes");

    else

    printf ("No");

    return 0;

}

**10. Write a function to print all prime factors of a given number. For example, if the number is 36 then your result should be 2, 2, 3, 3. (TSRN).**

#include<stdio.h>

void PrimeFactor (int);

void PrimeFactor (int x)

{

    int i;

    for (i=2; x! = 1; i++)

    {

       while (x % i == 0)

       {

            x = x/i;

            printf ("%d ", i);

       }

    }

}

int main ()

{

    int n;

    printf ("Enter a Number: ");

    scanf ("%d", &n);

    PrimeFactor(n);

    return 0;

}