ASSIGNMENT - 10

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

#include<stdio.h>

double area\_circle(int x)

{

    return(3.14\*x\*x);

}

int main()

{

    int a;

    double area;

    printf("Enter the radius of circle : ");

    scanf("%d",&a);

    area=area\_circle(a);

    printf("Area of circle of %d radius is : %.2f",a,area);

    return 0;

}

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

#include<stdio.h>

double SI(int x,int y,int z)

{

    return((x\*y\*z)/100);

}

int main()

{

    int a,b,c;

    double simple\_int;

    printf("Enter principal rate and time : ");

    scanf("%d %d %d",&a,&b,&c);

    simple\_int=SI(a,b,c);

    printf("Simple interest is : %.2f",simple\_int);

    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 evod(int x)

{

    if(x%2==0)

        return 1;

    else

        return 0;

}

int main()

{

    int a,val;

    printf("Enter a number : ");

    scanf("%d",&a);

    val=evod(a);

    printf("%d",val);

    return 0;

}

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

#include<stdio.h>

void nat\_num(int x)

{

    int i;

    for ( i = 1; i <= x; i++)

        printf("%d ",i);

}

int main()

{

    int a;

    printf("Enter a number : ");

    scanf("%d",&a);

    printf("%d Natural numbers are : \n",a);

    nat\_num(a);

    return 0;

}

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

#include<stdio.h>

void odd\_nat\_num(int x)

{

    int i;

    for ( i = 1; i <= x; i+=2)

        printf("%d ",i);

}

int main()

{

    int a;

    printf("Enter a number : ");

    scanf("%d",&a);

    printf("First %d Odd Natural numbers are : \n",a);

    odd\_nat\_num(2\*a-1);

    return 0;

}

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

#include<stdio.h>

int fact(int x)

{

    if(x==0)

        return 1;

    else

        return(x\*fact(x-1));

}

int main()

{

    int a;

    printf("Enter a number : ");

    scanf("%d",&a);

    printf("Factorial of %d is : %d",a,fact(a));

    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 fact(int x)

{

    if(x==0)

        return 1;

    else

        return(x\*fact(x-1));

}

int combi(int x,int y)

{

    return ((fact(x))/(fact(x-y)\*fact(y)));

}

int main()

{

    int a,b,val;

    printf("Enter total number of items : ");

    scanf("%d",&a);

    printf("Items selected at a time : ");

    scanf("%d",&b);

    val=combi(a,b);

    printf("Number of combinations are : %d\n",val);

    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 fact(int x)

{

    if(x==0)

        return 1;

    else

        return(x\*fact(x-1));

}

int permu(int x,int y)

{

    return fact(x)/fact(x-y);

}

int main()

{

    int a,b,val;

    printf("Enter total number of items : ");

    scanf("%d",&a);

    printf("Items selected at a time : ");

    scanf("%d",&b);

    val=permu(a,b);

    printf("Number of arrangments are : %d\n",val);

    return 0;

}

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

#include<stdio.h>

int f1(int x,int y)

{

    int rem;

    while(x!=0)

    {

       rem=x%10;

       if(rem==y)

        return 1;

        x=x/10;

    }

    return 0;

}

int main()

{

    long long int a;

    int b,val;

    printf("Enter a number : ");

    scanf("%d",&a);

    printf("Enter the number to be checked :");

    scanf("%d",&b);

    val=f1(a,b);

    if(val==1)

        printf("%d is present in %d",b,a);

    else

    printf("%d is not present in %d",b,a);

    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 prime\_factor(int x)

{

    int i;

    for(i=2;i<=x;i++)

    {

        while(x%i==0)

        {

            printf("%d ",i);

            x=x/i;

        }

    }

}

int main()

{

    int a,val;

    printf("Enter a number : ");

    scanf("%d",&a);

    printf("Prime factors of %d are :\n",a);

    prime\_factor(a);

    return 0;

}