**ASSIGNMENT – 10**

**Function in c**

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

#include<stdio.h>

float areaofcircle(float);

int main()

{

    float r;

    printf("Enter radius of circle:");

    scanf("%f",&r);

    printf("area:%f",areaofcircle(r));

    return 0;

}

float areaofcircle(float a)

{

    return 3.14\*a\*a;

}

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

#include<stdio.h>

float simpleinterest(float,float,float);

int main()

{

    float p,r,t;

    printf("Enter principal amount,rate of intrest and time period:");

    scanf("%f%f%f",&p,&r,&t);

    printf("Simple Interest:%f",simpleinterest(p,r,t));

    return 0;

}

float simpleinterest(float a,float b,float c)

{

    return a\*b\*c/100;

}

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 evenodd(int);

int main()

{

    int p;

    printf("Enter a no:");

    scanf("%d",&p);

    if(evenodd(p))

    printf("even no");

    else

    printf("odd no");

    return 0;

}

int evenodd(int a)

{

    if(a%2)

    return 0;

    return 1;

}

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

#include<stdio.h>

void naturalno(int);

int main()

{

    int p;

    printf("Enter a no:");

    scanf("%d",&p);

    naturalno(p);

    return 0;

}

void naturalno(int a)

{

    int i;

    for(i=1;i<=a;i++)

    printf("%d ",i);

}

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

#include<stdio.h>

void oddno(int);

int main()

{

    int p;

    printf("Enter a no:");

    scanf("%d",&p);

    oddno(p);

    return 0;

}

void oddno(int a)

{

    int i;

    for(i=1;i<=a;i++)

    printf("%d ",2\*i-1);

}

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

#include<stdio.h>

int fact(int a);

int main()

{

    int p;

    printf("Enter a no:");

    scanf("%d",&p);

    printf("factorial:%d",fact(p));

    return 0;

}

int fact(int f)

{

    int a=1,i;

    if(f==0||f==1)

    return 1;

    else if(f>1)

    {

    for(i=1;i<=f;i++)

    a\*=i;

    return a;

    }

}

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 comb(int a,int b);

int main()

{

    int n,r;

    printf("Enter no of items and no selected at a time:");

    scanf("%d%d",&n,&r);

    printf("combinatins of these nos:%d",comb(n,r));

    return 0;

}

int comb(int n,int r)

{

    int a,c,b,i;

    if(n>r)

    {

    for(i=1,a=1;i<=n;i++)

    a\*=i;

    for(i=1,b=1;i<=r;i++)

    b\*=i;

    for(i=1,c=1;i<=n-r;i++)

    c\*=i;

    return a/(b\*c);

    }

}

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 perm(int a,int b);

int main()

{

    int n,r;

    printf("Enter no of items and no selected at a time:");

    scanf("%d%d",&n,&r);

    printf("combinatins of these nos:%d",perm(n,r));

    return 0;

}

int perm(int n,int r)

{

    int a,b,i;

    if(n>r)

    {

    for(i=1,a=1;i<=n;i++)

    a\*=i;

    for(i=1,b=1;i<=n-r;i++)

    b\*=i;

    return a/b;

    }

}

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

#include<stdio.h>

int checkdigit(int a,int b);

int main()

{

    int n,r;

    printf("Enter a no and a digit:");

    scanf("%d%d",&n,&r);

    if(checkdigit(n,r))

    printf("yes, no cotains that digit");

    else

    printf("no not cotains that digit");

    return 0;

}

int checkdigit(int n,int d)

{

    while(n)

    {

        if(n%10==d)

        return 1;

        else

        n=n/10;

    }

    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);

int main()

{

    int n;

    printf("Enter a no:");

    scanf("%d",&n);

    primefactor(n);

    return 0;

}

void primefactor(int n)

{

    int a,i;

    for(a=n,i=2;i<=n/2;)

    {

        if(a%i==0)

        {

            printf("%d,",i);

            a=a/i;

        }

        else

        i++;

    }

}