**ASSIGNMENT 10**

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

#include<stdio.h>

float area(int);

int main(){

int r;

printf("Enter radius: ");

scanf("%d", &r);

printf("Area is %f", area(r));

}

float area(int r){

float pi=3.14;

return pi\*r\*r;

}

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

#include<stdio.h>

float si(int, int , int);

int main(){

int p,n,r;

printf("Enter principal amount: ");

scanf("%d", &p);

printf("Enter number of years: ");

scanf("%d", &n);

printf("Enter rate of interest: ");

scanf("%d", &r);

printf("Si is %f", si(p,n,r));

return 0;

}

float si(int p, int n, int r){

return (p\*n\*r)/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 check(int);

int main(){

int number;

printf("Enter number: ");

scanf("%d", &number);

printf("%d", check(number));

return 0;

}

int check(int n){

if(n%2==0) return 1;

else return 0;

}

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

#include<stdio.h>

void natural(int);

int main(){

int number;

printf("Enter number: ");

scanf("%d", &number);

natural(number);

return 0;

}

void natural(int n){

for(int i=1; i<=n; i++){

printf("%d ", i);

}

}

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

#include<stdio.h>

void odd(int);

int main(){

int number;

printf("Enter number: ");

scanf("%d", &number);

odd(number);

return 0;

}

void odd(int n){

for(int i=1; i<=n; i++){

printf("%d ", 2\*i-1);

}

}

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

#include<stdio.h>

int fact(int);

int main(){

int number;

printf("Enter number: ");

scanf("%d", &number);

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

return 0;

}

int fact(int n){

int a=1;

for(int i=1; i<=n; 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, int);

int main(){

int n,r;

printf("Enter number of items: ");

scanf("%d", &n);

printf("Enter r: ");

scanf("%d", &r);

printf("Number of combinations= %d", comb(n, r));

return 0;

}

int comb(int n, int r){

int n1=1, n2=1, r1=1;

for(int i=1; i<=n; i++){

n1\*=i; //n!

}

for(int i=1; i<=(n-r); i++){

n2\*=i; //(n-r)!

}

for(int i=1; i<=r; i++){

r1\*=i; //(r)!

}

return (n1)/(n2\*r1);

}

**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 arra(int, int);

int main(){

int n,r;

printf("Enter number of items: ");

scanf("%d", &n);

printf("Enter r: ");

scanf("%d", &r);

printf("Number of arrangements= %d", arra(n, r));

return 0;

}

int arra(int n, int r){

int n1=1, n2=1;

for(int i=1; i<=n; i++){

n1\*=i; //n!

}

for(int i=1; i<=(n-r); i++){

n2\*=i; //(n-r)!

}

return (n1)/(n2);

}

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

#include<stdio.h>

int digit(int, int);

int main(){

int n,d,e;

printf("Enter number: ");

scanf("%d", &n);

printf("Enter digit: ");

scanf("%d", &d);

e=digit(n,d);

if(e==100) printf("%d is present in %d", d,n);

else printf("%d is not present in %d", d,n);

return 0;

}

int digit(int n, int d){

int last;

while(n>0){

last=n%10;

n/=10;

if(last == d) {

return 100;

}

else continue;

}

}

**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 digit(int);

int main(){

int n;

printf("Enter number: ");

scanf("%d", &n);

digit(n);

return 0;

}

void digit(int n){

int flag;

for(int i=2; i<=n-1; i++)

{

if(n%i==0)

{

flag=0;

for(int j=2; j<=i/2; j++)

{

if(i%j==0)

{

flag=1;

break;

}

}

if(flag==0) printf("%d ", i);

}

}

}