**Assignment - 10 A Job Ready Bootcamp in C++, DSA and IOT**

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

#include<stdio.h>

int area();

int main()

{

int r,a;

printf("Enter the radious of the circle\n");

scanf("%d",&r);

printf("Ther area of the circle is %d square unit\n",a=area());

}

int area(int r)

{

int a;

return(a=r\*r\*3.14);

}

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

#include<stdio.h>

int intrest();

int main()

{

int p,t,r;

printf("Enter the ammount of capital\nEnter the time period\nEnter the rate of interest per annum\n");

scanf("%d %d %d",&p,&t,&r);

printf("The interest will be %d\n",intrest(p,t,r));

}

int intrest(int p,int t,int r)

{

int i;

i=p\*t\*r/100;

return i;

}

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 enod();

int main()

{

int n;

printf("Enter a numner :\n");

scanf("%d",&n);

if(enod(n))

printf("Even\n");

else

printf("Odd\n");

}

int enod(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 main()

{

int n;

printf("Enter a number:\n");

scanf("%d",&n);

natural(n);

printf("\n");

return 0;

}

void natural(int n)

{

int i;

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

{

printf("%d\n",i);

}

}

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

#include<stdio.h>

void natural ();

int main()

{

int n;

printf("Enter a number:\n");

scanf("%d",&n);

natural(n);

printf("\n");

return 0;

}

void natural(int n)

{

int i;

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

{

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

}

}

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

#include<stdio.h>

int fact();

int main()

{

int n;

printf("Enter a numeber:\n");

scanf("%d",&n);

printf("%d",fact(n));

printf("\n");

return 0;

}

int fact(int n)

{

int m=1;

if(n==0)

return 1;

else if(n==1)

return 1;

else

m=n\*fact(n-1);

}

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>

long long int comb();

long long int fact(int n);

int main()

{

int n,r;

printf("Eneter the numer of items:\n Enter the number of item selected at a time\n");

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

printf("number of combinations one can make from %d items and %d selected at a time %lld",n,r,comb(n,r));

}

long long int comb(int n,int r)

{

long long int com;

com=(fact(n)/(fact(n-r)\*fact(r)));

return com;

}

long long int fact(int n)

{

long long int m=1;

if(n==0)

return 1;

else if(n==1)

return 1;

else

m=n\*fact(n-1);

}

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>

long long int permut();

long long int fact();

int main()

{

int n,r;

printf("Eneter the numer of items:\n Enter the number of item selected at a time\n");

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

printf("number of arrangements one can make from %d items and %d selected at a time %lld \n",n,r,permut(n,r));

}

long long int permut(int n,int r)

{

long long int com;

com=(fact(n)/fact(n-r));

return com;

}

long long int fact(int n)

{

long long int m=1;

if(n==0)

return 1;

else if(n==1)

return 1;

else

m=n\*fact(n-1);

}

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

#include<stdio.h>

int sear();

int main()

{

int n,a,f;

printf("Enter a number\nEnter a digit you want to search\n");

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

f=sear(n,a);

if(f)

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

else

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

}

int sear(int n,int a)

{

int i,j,num;

for(j=1;j;)

{

n/=10;

for(i=1;i<=9;i++)

{

num=n%10;

if(i==num)

i=100;

break;

}

if(n==0)

break;

}

return i;

}

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 prf(int n);

int main()

{

int n;

printf("Enter a Number:\n");

scanf("%d",&n);

prf(n);

printf("\n");

return 0;

}

void prf(int n)

{

int i;

for(i=2;i<=n;i++)

{

if(n%i==0)

{

printf("%d ",i);

n/=i;

i=1;

}

}

}