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

**Functions in C Language**

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

#include<stdio.h>

float areaCircle(float);

int main()

{

float res;

res = areaCircle(3.5);

printf("Area of Circle is : %f",res);

return 0;

}

float areaCircle(float r)

{

return 3.14 \* r \* r;

}

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

#include<stdio.h>

int simpleInterest(int,float,int);

int main()

{

int res;

res = simpleInterest(10000,6.8,5);

printf("The Interest is : %d",res);

return 0;

}

int simpleInterest(int p,float r,int t)

{

float SI;

SI = (p \* r \* t)/100;

return SI;

}

1. 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 n;

printf("Enter a number : ");

scanf("%d",&n);

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

return 0;

}

int evenOdd(int x)

{

if(x%2==0)

return 1;

else

return 0;

}

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

#include<stdio.h>

void printNatural(int);

int main()

{

int n;

printf("Enter a number : ");

scanf("%d",&n);

printNatural(n);

return 0;

}

void printNatural(int x)

{

int i;

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

printf("%d ",i);

return 0;

}

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

#include<stdio.h>

void oddNatural(int);

int main()

{

int n;

printf("Enter a number : ");

scanf("%d",&n);

oddNatural(n);

return 0;

}

void oddNatural(int x)

{

int i;

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

{

if(i%2!=0)

printf("%d ",i);

}

return 0;

}

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

#include<stdio.h>

int calculateFact(int);

int main()

{

int n;

printf("Enter a number : ");

scanf("%d",&n);

printf("Facorial of %d is : %d",n,calculateFact(n));

return 0;

}

int calculateFact(int x)

{

int i,fact=1;

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

fact = fact \* i;

return fact;

}

1. 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 fact(int);

int main()

{

int y,z,res;

printf("Enter value of n: ");

scanf("%d",&y);

printf("Enter value of r: ");

scanf("%d",&z);

printf("nCr : %d",comb(y,z));

return 0;

}

int comb(int n,int r)

{

return fact(n)/(fact(r) \* fact(n-r)) ;

}

int fact(int x)

{

int i,fact=1;

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

fact = fact \* i;

return fact;

}

1. 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 per(int,int);

int fact(int);

int main()

{

int y,z,res;

printf("Enter value of n: ");

scanf("%d",&y);

printf("Enter value of r: ");

scanf("%d",&z);

printf("nPr : %d",per(y,z));

return 0;

}

int per(int n,int r)

{

return fact(n)/(fact(n-r)) ;

}

int fact(int x)

{

int i,fact=1;

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

fact = fact \* i;

return fact;

}

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

#include<stdio.h>

int check(int,int);

int main()

{

int x,digit,res;

printf("Enter number : ");

scanf("%d",&x);

printf("Enter digit : ");

scanf("%d",&digit);

res = check(x,digit);

if(res == 1)

printf("%d is found",digit);

else

printf("%d is not found",digit);

return 0;

}

int check(int n ,int digit)

{

int rem;

while(n)

{

rem = n%10;

if(rem==digit)

return 1;

else

n=n/10;

}

return 0;

}

1. 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 primefact(int);

int main()

{

int x;

printf("Enter number : ");

scanf("%d",&x);

primefact(x);

return 0;

}

void primefact(int n)

{

int i;

for(i = 2; i!=1;i++)

{

while(n%i==0)

{

n = n/i;

printf("%d ,",i);

}

}

return 0;

}