–––Assignment – 10

A Job Ready Bootcamp in C++, DSA and IOT

Functions in C Language

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

Program:

#include<stdio.h>

float area(int r)

{zxd

return (3.1415\*r\*r);

}

int main()

{

int r;

printf("Enter the radius in cm: ");

scanf("%d",&r);

printf("\n Area of circle is %.1f sqcm",area(r));

printf("\n");

return 0;

}

Output:

Enter the radius in cm: 10

Area of circle is 314.1 sqcm

--------------------------------

Process exited after 1.477 seconds with return value 0

Press any key to continue . . .

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

Program:

#include<stdio.h>

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

{

return (p\*r\*t/100);

}

int main()

{

int p,r,t;

printf(" Enter the Principal amount: ");

scanf("%d",&p);

printf("Enter the Rate of Intreest: ");

scanf("%d",&r);

printf("Enter the time duration: ");

scanf("%d",&t);

printf("Simple Interest is %.2f .",SI(p,r,t));

return 0;

}

Output:

Enter the Principal amount: 5000

Enter the Rate of Intreest: 10

Enter the time duration: 5

Simple Interest is 2500.00 .

--------------------------------

Process exited after 9.913 seconds with return value 0

Press any key to continue . . .

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)

PROGRAM:

#include<stdio.h>

int oddOrEven(int n)

{

if(n%2==0)

return 1;

else

return 0;

}

int main()

{

int n;

printf("Enter a number: ");

scanf("%d",&n);

if(oddOrEven(n)==1)

printf("Returned is %d. \nThe given Number is even.",oddOrEven(n));

else

printf("Returned is %d. \nThe given number is odd",oddOrEven(n));

return 0;

}

OUTPU:

Enter a number: 5

Returned is 0.

The given number is odd

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Process exited after 2.219 seconds with return value 0

Press any key to continue . . .

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

Program:

#include<stdio.h>

void naturalNumber(int n)

{

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

{

printf("%d ",i);

}

}

int main()

{

int n;

printf("Enter value of n for natural number: ");

scanf("%d",&n);

naturalNumber(n);

return 0;

}

OUTPUT:

Enter value of n for natural number: 20

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

--------------------------------

Process exited after 2.839 seconds with return value 0

Press any key to continue . . .

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

Program:

#include<stdio.h>

void natural\_Odd\_Number(int n)

{

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

{

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

}

}

int main()

{

int n;

printf("Enter value of n for natural odd number: ");

scanf("%d",&n);

natural\_Odd\_Number(n);

return 0;

}

Output:

Enter value of n for natural odd number: 10

1 3 5 7 9 11 13 15 17 19

--------------------------------

Process exited after 2.068 seconds with return value 0

Press any key to continue . . .

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

PROGRAM:

#include<stdio.h>

int factorial(int n)

{

int fact=1;

while(n>=1)

{

fact=fact\*n;

n--;

}

return fact;

}

int main()

{

int n;

printf("Enter value of n for fatorial: ");

scanf("%d",&n);

printf("factorial of %d is %d",n,factorial(n));

return 0;

}

OUTPUT:

Enter value of n for fatorial: 5

factorial of 5 is 120

--------------------------------

Process exited after 0.4244 seconds with return value 0

Press any key to continue . . .

7. Write a function to calculate the number of combinations one can make from n items

and r selected at a time. (TSRS)

PROGRAM;

#include<stdio.h>

int fact(int);

int combination(int,int);

int fact(int n)

{

int result=1;

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

{

result=result \* i;

}

return result;

}

int combination(int n ,int r)

{

int result;

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

return result;

}

int main()

{

int n,r;

printf(" Enter number of items and selected items: ");

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

int result=combination(n,r);

printf("\nNn. of combination are : %d",result);

return 0;

}

OUTPUT:

Enter number of items and selected items: 5 2

Nn. of combination are : 20

--------------------------------

Process exited after 5.099 seconds with return value 0

Press any key to continue . . .

8. Write a function to calculate the number of arrangements one can make from n items

and r selected at a time. (TSRS)

PROGRAM:

#include<stdio.h>

int fact(int);

int combination(int,int);

int fact(int n)

{

int result=1;

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

{

result=result \* i;

}

return result;

}

int combination(int n ,int r)

{

int result;

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

return result;

}

int main()

{

int n,r;

printf(" Enter number of items and selected items: ");

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

int result=combination(n,r);

printf("\nNn. of arrangements are : %d",result);

return 0;

}

output:

Enter number of items and selected items: 5 4

Nn. of arrangements are : 5

--------------------------------

Process exited after 2.856 seconds with return value 0

Press any key to continue . . .

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

(TSRS)

Program:

#include<stdio.h>

int find\_digit(int,int);

int find\_digit(int num,int n)

{

int remainder;

int flag=0;

while(num>0)

{

remainder=num%10;

if(remainder==n)

flag=1;

num=num/10;

}

if(flag==1)

return 1;

else

return 0;

}

int main()

{

int num,n;

printf("Enter the number and digit: ");

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

int result=find\_digit(num,n);

if(result==1)

printf("the digit is present in the number.");

else

printf("The digit is not present the given number.");

}

Output:

Enter the number and digit: 456

7

The digit is not present the given number.

--------------------------------

Process exited after 3.84 seconds with return value 0

Press any key to 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)

Program:

#include<stdio.h>

void prime\_factor(int);

void prime\_factor(int n)

{

for(int i=2;n>1;i++)

{

while(n%i==0)

{

printf("%d, ",i);

n=n/

}

}

}

int main()

{

int n;

printf("Enter the number;");

scanf("%d",&n);

prime\_factor(n);

}

OUTPUT:

Enter the number;144

2, 2, 2, 2, 3, 3,

--------------------------------

Process exited after 5.163 seconds with return value 0

Press any key to continue . . .