Assignment – 07

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

Name: Tushar Maliye Date:21/12/2022

User id: [tusharmaliye59@gmail.com](mailto:tusharmaliye59@gmail.com)

1. Write a program to find the Nth term of the Fibonnaci series.

Program:

#include<stdio.h>

int main()

{

int n,t1,t2,t3;

printf("Enter the number:");

scanf("%d",&n);

printf("enter the first element of the series: ");

scanf("%d",&t1);

t2=t1+1;

int i=2;

while(i<n)

{

t3=t1+t2;

t1=t2;

t2=t3;

i++;

};

printf("%dth term = %d ",n,t2 );

return 0;

}

Output:

Enter the number:5

enter the first element of the series: 0

5th term = 3

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Process exited after 6.126 seconds with return value 0

Press any key to continue . . .

1. Write a program to print first N terms of Fibonacci seriesProgram:

#include<stdio.h>

int main()

{

int n,t1,t2,t3;

printf("Enter the number of terms:");

scanf("%d",&n);

printf("enter the first element of the series: ");

scanf("%d",&t1);

t2=t1+1;

printf("%d",t1);

printf(" %d",t2);

int i=2;

while(i<n)

{

t3=t1+t2;

t1=t2;

t2=t3;

printf(" %d ",t2 );

i++;

};

return 0;

}

Output:

Enter the number of terms: 10

enter the first element of the series: 0

0 1 1 2 3 5 8 13 21 34

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Process exited after 5.014 seconds with return value 0

Press any key to continue . . .

Write a program to check whether a given number is there in the Fibonacci

series or not.

#include<stdio.h>

int main()

{

int n,t1,t2,t3,flag;

printf("Enter the number:");

scanf("%d",&n);

t1=0;

t2=1;

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

{

if(n==t1||n==t2)

{

flag=1;

break;

}

t3=t1+t2;

t1=t2;

t2=t3;

i++;

}

if(flag==1)

printf("Yes");

else

printf("No");

return 0;

}

Output:

Enter the number:45

No

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Process exited after 5.448 seconds with return value 0

Press any key to continue

4. Write a program to calculate HCF of two numbers

Program:

#include<stdio.h>

int main()

{

int n1,n2;

printf(" Enter the numbers :");

scanf("%d %d",&n1,&n2);

int min,hcf=1;

min=(n1<n2)?n1:n2;

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

{

if(n1%i==0 && n2%i==0)

{

hcf=i;

}

}

printf("HCF is %d",hcf);

return 0;

}

Output:

Enter the numbers : 4 6

HCF is 2

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Process exited after 5.734 seconds with return value 0

Press any key to continue . . .

5. Write a program to check whether two given numbers are co-prime

numbers or not

Program:

#include<stdio.h>

int main()

{

int n1,n2;

printf(" Enter the numbers :");

scanf("%d %d",&n1,&n2);

int min,hcf=1;

min=(n1<n2)?n1:n2;

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

{

if(n1%i==0 && n2%i==0)

{

hcf=i;

}

}

if(hcf==1)

printf("The numbers are co-prime and HCF is %d",hcf);

else

printf("The numbers are not co-prime because hcf is %d > 1",hcf);

return 0;

}

output:

Enter the numbers :4 6

The numbers are not co-prime because hcf is 2 > 1

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Process exited after 3.461 seconds with return value 0

Press any key to continue . . .

Program:

#include<stdio.h>

int main()

{

printf(" prime numbers are : \n");

for(int i=2;i<=100;i++)

{

int p=0;

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

{

if(i%j==0)

{

p++;

if(p==2 && i==j)

{

printf(" %d,",i);

}

}

}

}

return 0;

}

Output:

prime numbers are :

2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73, 79, 83, 89, 97,

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Process exited after 0.04192 seconds with return value 0

Press any key to continue . . .

7. Write a program to print all Prime numbers between two given numbers

Program:

#include<stdio.h>

int main()

{

int n1,n2;

printf("program for prime numbers between two numbers: ");

printf("\nEnter two numbers:");

scanf("%d,%d",&n1,&n2);

if(n1!=n2)

{

int min=(n1<n2)?n1:n2;

int max=(n1<n2)?n2:n1;

printf("\nprime numbers are : \n");

for(int i=min+1 ;i<max; i++)

{

int p=0;

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

{

if(i%j==0)

{

p++;

if(p==2 && i==j)

{

printf(" %d,",i);

}

}

}

}

}

else

printf("invalid numbers");

return 0;

}

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Output:

program for prime numbers between two numbers:

Enter two numbers:5,5

invalid numbers

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Process exited after 8.515 seconds with return value 0

Press any key to continue . . .

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program for prime numbers between two numbers:

Enter two numbers:5,79

prime numbers are :

7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73,

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

Process exited after 6.04 seconds with return value 0

Press any key to continue . . .

9. Write a program to check whether a given number is an Armstrong number

or not

program:

#include<stdio.h>

#include<math.h>

int main()

{

int originalNum,num,lastDigit,digit,sum=0;

printf("Enter any number to check armsrong number: ");

scanf("%d",&num);

originalNum=num;

digit=log10(num)+1;

while(num>0)

{

lastDigit=num%10;

sum=sum+pow(lastDigit,digit);

num=num/10;

}

if(originalNum==sum)

{

printf("%d is armstrong number.",originalNum);

}

else

{

printf("%d is not a armstrong number.",originalNum);

}

return 0;

}

Output:

Enter any number to check armsrong number: 153

153 is armstrong number.

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Process exited after 2.046 seconds with return value 0

Press any key to continue . . .

10. Write a program to print all Armstrong numbers under 1000

Input:

#include<stdio.h>

#include<math.h>

int main()

{

int originalNum, num, lastDigit, digit;

printf("Enter any number to print armstrong number: ");

scanf("%d",&num);

printf("Series of Armstrong number is:\n");

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

{

int sum=0;

int originalNum;

originalNum=i;

digit=(int)log10(originalNum)+1;

while(originalNum>0)

{

lastDigit=originalNum%10;

sum=sum+pow(lastDigit,digit);

originalNum=originalNum/10;

}

if(sum==i)

{

printf("%d, ",sum);

}

}

return 0;

}

Output:

Enter any number to print armsrong number: 1000

Series of Armstrong number is:

1, 2, 3, 4, 5, 6, 7, 8, 9, 153, 370, 371, 407,

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Process exited after 4.56 seconds with return value 0

Press any key to continue . . .