Assignment – 3

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

Input and output in C Language

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1. Write a program to check whether a given number is positive or non-positive.

Program

#include<stdio.h>

int main()

{

int num;

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

scanf("%d",&num);

if(num>0)

printf("output\n positive number");

else

printf("output\n non-positive number");

return 0;

}

Output:

Input

Enter a number:14

output

positive number

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

Process exited after 8.388 seconds with return value 0

Press any key to continue . . .

1. Write a program to check whether a given number is divisible by 5 or not

Program

#include<stdio.h>

int main()

{

int num;

printf("Enter a number:");

scanf("%d",&num);

if(num%5==0)

printf("number is divisible by 5");

else

printf("number is not divisibel by 5");

return 0;

}

Output:

Enter a number:12

number is not divisibel by 5

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

Process exited after 3.832 seconds with return value 0

Press any key to continue . .

.

1. Write a program to check whether a given number is an even number or an odd

number.

Program

#include<stdio.h>

int main()

{

int num;

printf("Enter a number:");

scanf("%d",&num);

if(num%2==0)

printf("%d is even",num);

else

printf("%d is odd",num);

return 0;

}

Output:

Enter a number:13

13 is odd

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

Process exited after 2.596 seconds with return value 0

Press any key to continue . . .

1. Write a program to check whether a given number is an even number or an odd

number without using % operator.

Program

#include<stdio.h>

int main()

{

int num;

printf("Enter a number:");

scanf("%d",&num);

if(num & 1)

printf("%d is odd",num);

else

printf("%d is even",num);

return 0;

}

Output:

Enter a number:15

15 is odd

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

Process exited after 2.307 seconds with return value 0

Press any key to continue . . .

1. Write a program to check whether a given number is a three-digit number or not.

Program

#include<stdio.h>

int main()

{

int num;

printf("Enter a number:");

scanf("%d",&num);

if(100<=num<=999)

printf("%d is three digit number.",num);

else

printf("It is not a three digit number.")

printf("\n");

return 0;

}

Output:

Enter a number: 253

253 is three digit number.

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

Process exited after 4.952 seconds with return value 0

Press any key to continue . . .

1. Write a program to print greater between two numbers. Print one number of both are

the same.

Program

#include<stdio.h>

int main()

{

int num1,num2;

printf("Enter two number:");

scanf("%d %d",&num1,&num2);

if(num2>num1)

printf("%d is greater that %d.",num2,num1);

if(num1>num2)

printf("%d is greater than %d.",num1,num2);

else

printf("Both the numbers are equal.The number is %d",num1);

printf("\n");

return 0;

}

Output:

Enter two number: 45 12

45 is greater than 12.

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

Process exited after 4.479 seconds with return value 0

Press any key to continue . . .

Enter two number: 45 45

Both the numbers are equal. The number is 45

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

Process exited after 4.1 seconds with return value 0

Press any key to continue . . .

1. Write a program to check whether roots of a given quadratic equation are real &

distinct, real & equal or imaginary roots

Program

#include<stdio.h>

#include<math.h>

int main(){

int a,b,c;

float d;

float x1,x2;

printf("entre the value of a,b,c of the quadratic equation:");

scanf("%d%d%d",&a,&b,&c);

d=((b\*b)-(4\*a\*c));

if(d>0)

printf("the roots of the equation are real and distinct.");

if(d<0)

printf("the roots of the equation are imaginary.");

else

printf("the roots of the equation are real and equal.");

printf("\n");

return 0;

}

Output:

entre the value of a,b,c of the quadratic equation:1 4 4

the roots of the equation are real and equal.

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

Process exited after 7.052 seconds with return value 0

Press any key to continue . . .

8. Write a program to check whether a given year is a leap year or not.

Program

#include<stdio.h>

int main(){

int year,count=0;

printf("Enter the year:");

scanf("%d",&year);

if(year%400==0)

count=count+1;

if(year%100==0)

count=count-1;

if(year%4==0)

count=count+1;

if(count==1)

printf("%d is a leap year",year);

else

printf("%d is not a leap year",year);

printf("\n");

return 0;

}

Output:

Enter the year:1900

1900 is not a leap year

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

Process exited after 4.566 seconds with return value 0

Press any key to continue . . .

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

Enter the year:2022

2022 is not a leap year

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Process exited after 10.16 seconds with return value 0

Press any key to continue . . .

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

Enter the year:2020

2020 is a leap year

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

Process exited after 4.393 seconds with return value 0

Press any key to continue . . .

1. Write a program which takes the cost price and selling price of a product from the

user. Now calculate and print profit or loss percentage.

Program

#include<stdio.h>

int main(){

float cp,sp;

float profit,loss;

printf("Enter the cost price:");

scanf("%f",&cp);

printf("Enter the selling price:");

scanf("%f",&sp);

if(sp>cp)

{

profit=((sp/cp)-1)\*100;

printf("The profit is %.2f%%",profit);

}

if(sp<cp){

loss=(1-(sp/cp))\*100;

printf("The loss is %.2f%%",loss);

}

if(sp==cp)

{

printf("No Loss No profit");

}

printf("\n");

return 0;

}

Output:

Enter the cost price:200

Enter the selling price:250

The profit is 25.00%

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

Process exited after 4.289 seconds with return value 0

Press any key to continue . . .

11. Write a program to take marks of 5 subjects from the user. Assume marks are given

out of 100 and passing marks is 33. Now display whether the candidate passed the

examination or failed.

Program: without using the array.

#include<stdio.h>

int main(){

int s1,s2,s3,s4,s5;

int marks;

printf("Enter the marks of subject 1:");

scanf("%d",&s1);

printf("Enter the marks of subject 2:");

scanf("%d",&s2);

printf("Enter the marks of subject 3:");

scanf("%d",&s3);

printf("Enter the marks of subject 4:");

scanf("%d",&s4);

printf("Enter the marks of subject 5:");

scanf("%d",&s5);

if(s1<33)

printf("fail in s1.");

if(s2<33)

printf("fail in s2.");

if(s3<33)

printf("fail in s3.");

if(s4<33)

printf("fail in s4.");

if(s5<33)

printf("fail in s5.");

else

printf("\nPass in all subjects.");

marks=(s1+s2+s3+s4+s5);

printf("\nTotal marks obtained is %d / 500",marks);

float percentage = (marks/5);

printf("\n Percentage=%.2f",percentage);

printf("\n");

return 0;

}

Output:

Enter the marks of subject 1:85

Enter the marks of subject 2:95

Enter the marks of subject 3:75

Enter the marks of subject 4:85

Enter the marks of subject 5:85

Pass in all subjects.

Total marks obtained is 425 / 500

Percentage=85.00

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

Process exited after 8.068 seconds with return value 0

Press any key to continue . . .

12. Write a program to check whether a given alphabet is in uppercase or lowercase.

Program:

#include<stdio.h>

int main(){

char x;

printf("Enter the alphabet:");

scanf("%c",&x);

if(x>='A'&& x<='Z'){

printf("Alphabet is in upper case");

}else if(x>='a' && x<='z'){

printf("Alphabet is in lower case");

}else

printf("It is not an alphabet");

printf("\n");

return 0;

}

Output:

Enter the alphabet:D

Alphabet is in upper case

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

Process exited after 5.034 seconds with return value 0

Press any key to continue . . .

Write a program to check whether a given number is divisible by 3 and divisible by 2.

Program

#include<stdio.h>

int main(){

int num;

printf("Enter a number:");

scanf("%d",&num);

if(num%2==0 && num%3==0){

printf("Number is divisible 2 and 3");

}else

printf(" number is not divisible by 2 and 3");

printf("\n");

return 0;

}

Output:

Enter a number:6

Number is divisible 2 and 3

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

Process exited after 2.745 seconds with return value 0

Press any key to continue . . .

14. Write a program to check whether a given number is divisible by 7 or divisible by 3.

Program:

#include<stdio.h>

int main(){

int num;

printf("Enter a number:");

scanf("%d",&num);

if(num%7==0)

printf("Number is divisible 7.");

else

printf("Number is not divisible by 7");

if(num%3==0)

printf("\nNumber is divisible 3.");

else

printf("\nNumber is not divisible by 7");

printf("\n");

return 0;

}

Output:

Enter a number:21

Number is divisible 7.

Number is divisible 3.

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

Process exited after 3.996 seconds with return value 0

Press any key to continue . . .

15. Write a program to check whether a given number is positive, negative or zero.

Input:

#include<stdio.h>

int main(){

int num;

printf("Enter a number:");

scanf("%d",&num);

if(num>0){

printf("Number is positive.");

} else if(num<0){

printf("Number is negative.");

}else

printf("Number is zero.");

printf("\n");

return 0;

}

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

Output:

Enter a number: 12

Number is positive.

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

Process exited after 2.688 seconds with return value 0

Press any key to continue . . .

Program:

#include<stdio.h>

int main(){

int a,b,c;

printf("Enter the sides of the triangle:");

scanf("%d %d %d",&a,&b,&c);

if((a+b>c) || (a+c>b) || (b+c>a))

{

printf(" triangle is valid.");

}

else

{

printf(" triangle is invalid.");

}

}

Output:

Enter the sides of the triangle: 3 4 5

triangle is valid.

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

Process exited after 5.12 seconds with return value 0

Press any key to continue . . .

18. Write a program which takes the month number as an input and display number of

days in that month

program:

#include<stdio.h>

int main(){

int num;

printf("1.Jan\n2.Feb\n3.March\n4.April\n5.May\n6.Jun");

printf("\n7.July\n8.Aug\n9.Sept\n10.Oct\n11.Nov\n12.Dec");

printf("\n\nEnter the month number:");

scanf("%d",&num);

switch(num)

{

case 1:

printf("Number of days: 31");

break;

case 2:

printf("Number of days: 28 or 29");

break;

case 3:

printf("Number of days: 31");

break;

case 4:

printf("Number of days: 30");

break;

case 5:

printf("Number of days: 31");

break;

case 6:

printf("Number of days: 30");

break;

case 7:

printf("Number of days: 31");

break;

case 8:

printf("Number of days: 31");

break;

case 9:

printf("Number of days: 30");

break;

case 10:

printf("Number of days: 31");

break;

case 11:

printf("Number of days: 30");

break;

case 12:

printf("Number of days: 31");

break;

}

printf("\n");

return 0;

}

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

Output:

1.Jan

2.Feb

3.March

4.April

5.May

6.Jun

7.July

8.Aug

9.Sept

10.Oct

11.Nov

12.Dec

Enter the month number:12

Number of days: 31

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

Process exited after 3.64 seconds with return value 0

Press any key to continue . . .