21.Finding the given integer is positive or negative

#include <stdio.h>

int main() {

double num;

printf("Enter a number: ");

scanf("%lf", &num);

if (num < 0.0)

printf("You entered a negative number.");

else if (num > 0.0)

printf("You entered a positive number.");

else

printf("You entered 0.");

return 0;

}

Output

Enter a number: 12.3

You entered a positive number

22. Swapping two numbers with a temporary variable

#include <stdio.h>

int main() {

double a, b;

printf("Enter a: ");

scanf("%lf", &a);

printf("Enter b: ");

scanf("%lf", &b);

a = a - b;

b = a + b;

a = b - a;

printf("After swapping, a = %.2lf\n", a);

printf("After swapping, b = %.2lf", b);

return 0;

}

Output

Enter a: 10.25

Enter b: -12.5

After swapping, a = -12.50

After swapping, b = 10.25

23. swapping two numbers without a temporary variable

#include <stdio.h>

void swap(int \*,int\*);

int main ()

{

int a, b;

printf("Enter two numbers: ");

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

printf("Before Swapping : a=%d,b=%d\n",a,b);

swap(&a,&b);

printf("After Swapping : a=%d,b=%d\n",a,b);

return 0;

}

void swap(int \*a,int \*b){

\*a += \*b;

\*b = \*a-\*b;

\*a = \*a-\*b;

}

Output

Enter two numbers: 1 2

Before Swapping : a=1,b=2

After Swapping : a=2,b=1

24. . Swap 3 numbers a to b, b to c and c to a

#include <stdio.h>

void cyclicSwap(int\* a, int\* b, int\* c)

{

int temp = \*b;

\*b = \*a;

\*a = \*c;

\*c = temp;

}

int main()

{

int a = 2, b = 4, c = 7;

printf("Value before swapping:\n");

printf("a = %d \nb = %d \nc = %d\n", a, b, c);

cyclicSwap(&a, &b, &c);

printf("Value after swapping:\n");

printf("a = %d \nb = %d \nc = %d", a, b, c);

return 0;

}

Output

Value before swapping:

a = 2

b = 4

c = 7

Value after swapping:

a = 7

b = 2

c = 4

25. Finding the biggest out of 2 integer numbers

#include <stdio.h>

int main() {

int x, y, \*p1, \*p2;

printf("Please Enter Two different values\n");

scanf("%d %d", &x, &y);

p1 = &x;

p2 = &y;

if(\*p1 > \*p2)

{

printf("The Larges = %d\n", \*p1);

}

else if (\*p2 > \*p1)

{

printf("The Largest = %d\n", \*p2);

}

else

{

printf("Both are Equal\n");

}

return 0;

}

Output

Please Enter Two different values

99

15

The Largest = 99

Please Enter Two different values

12

19

The Largest = 19

Please Enter Two different values

15

15

Both are Equal

26. Finding the biggest out of n integers

#include<stdio.h>

void main()

{

int maximum(int a[],int n);

int max,i,n;

int a[50];

printf("Enter n number:");

scanf("%d",&n);

printf("Enter the numbers:");

for(i=0;i<n;i++)

scanf("%d",&a[i]);

max=maximum(a,n);

printf("The largest number is %d",max);

}

int maximum(int a[],int n)

{

int i,m=0;

for(i=0;i<n;i++)

{

if(a[i]>m)

m=a[i];

}

return m;

}

27Sine series [sin(x) = x - x 3 /3! + x 5 /5! - x 7 /7! . . . . . . ]

#include<stdio.h>

#include<math.h>

double factorial(int);

void calc(float, float\*);

int main()

{

int x;

float radian, result = 0;

printf("Enter value of x in degrees\n");

scanf("%d", &x);

radian = x \* (3.14159 / 180.0); // Convert Degree To Radian

calc(radian, &result);

printf("Sin(%d) = %f\n", x, result);

return 0;

}

void calc(float num, float \*res)

{

int count, n = 1, sign = 1;

for(count = 1; (n <= 10); count += 2)

{

\*res += sign \* ( pow(num, count) / factorial(count) );

n += 1;

sign \*= -1;

}

}

double factorial(int num)

{

int count;

double sum = 1;

for(count = 1; count <= num; count++)

{

sum \*= count;

}

return(sum);

}

Output

Enter value of x is degrees  
0  
Sin(0) = 0.000000

28. Cos series [cos(x) = 1 – x 2 /2! + x 4 /4! – x 6 /6! . . . . . . ]

#include<stdio.h>

int main ()

{

double x, ret, val;

x = 60.0;

val = PI / 180.0;

ret = cos( x \* val );

printf("The cosine of %lf is ", x);

printf("%lf degrees\n", ret);

x = 90.0;

val = PI / 180.0;

ret = cos( x\*val );

printf("The cosine of %lf is ", x);

printf("%lf degrees\n", ret);

return 0;

}

Output

The cosine of 60.000000 is 0.500000 degrees

The cosine of 90.000000 is 0.000000 degrees

29. Exponential series [e -1 = 1 – x/1! + x 2 /2! – x 3 /3! + x4 /4! . . . . . . ]

#include <stdio.h>

double e(int x, int n)

{

static double p = 1, f = 1;

double r;

if (n == 0)

return 1;

r = e(x, n - 1);

p = p \* x;

f = f \* n;

return (r + p / f);

}

int main()

{

int x = 4, n = 15;

printf("%lf \n", e(x, n));

return 0;

}

Output

54.597883