PROGRAMMING IN C

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**1. To display addition of all ODD numbers from 1 to 20**

**PROGRAM :**

//To display addition of all ODD numbers from 1 to 20.

#include<stdio.h>

#include<conio.h>

void main()

{

int i,sum=0;

for(i=1;i<20;i++)

{

if(i%2!=0)

{

sum=sum+i;

}

}

printf("The sum of all odd numbers between 1 to 20 is : %d",sum);

getch();

}

**OUTPUT :**

The sum of all odd numbers between 1 to 20 is : 100

**2. To perform linear search for 10 different numbers**

**PROGRAM :**

//Write a program for linear search

#include<stdio.h>

#include<conio.h>

void main()

{

int i,n,e;

int a[10];

for(i=0;i<10;i++)

{

printf("Enter numbers in the array : ");

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

}

printf("Enter a random number : ");

scanf("%d",&e);

for(i=0;i<10;i++)

{

if(a[i]==e)

{

printf("Entered number matches the list \n");

break;

}

else

{

printf("Entered number doesn't matches the list \n");

break;

}

}

getch();

}

**OUTPUT :**

Enter numbers in the array : 3

Enter numbers in the array : 4

Enter numbers in the array : 1

Enter numbers in the array : 2

Enter numbers in the array : 0

Enter numbers in the array : 9

Enter numbers in the array : 8

Enter numbers in the array : 7

Enter numbers in the array : 7

Enter numbers in the array : 5

Enter a random number : 3

Entered number matches the list

**3. To find matrix subtraction for 3x2 matrix**

**PROGRAM :**

//To find matrix subtraction for 3x2 matrix.

#include<stdio.h>

#include<conio.h>

void main()

{

int a[3][2],i,j,b[3][2];

int c,d,e,f,g,h;

for(i=0;i<3;i++)

{

for(j=0;j<2;j++)

{

printf("Enter value of numbers in matrix 1 : ");

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

}

}

printf("Numbers entered are :\n");

for(i=0;i<3;i++)

{

for(j=0;j<2;j++)

{

printf("%d\t",a[i][j]);

}

printf("\n");

}

for(i=0;i<3;i++)

{

for(j=0;j<2;j++)

{

printf("Enter value of numbers in matrix 2 : ");

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

}

}

printf("Numbers entered are :\n");

for(i=0;i<3;i++)

{

for(j=0;j<2;j++)

{

printf("%d\t",b[i][j]);

}

printf("\n");

}

c=a[0][0]-b[0][0];

d=a[0][1]-b[0][1];

e=a[1][0]-b[1][0];

f=a[1][1]-b[1][1];

g=a[2][0]-b[2][0];

h=a[2][1]-b[2][1];

printf("The matrix subraction of the two matrix is :\n");

printf("%d %d \n",c,d);

printf("%d %d \n",e,f);

printf("%d %d ",g,h);

getch();

}

**OUTPUT :**

Enter value of numbers in matrix 1 : 6

Enter value of numbers in matrix 1 : 7

Enter value of numbers in matrix 1 : 8

Enter value of numbers in matrix 1 : 6

Enter value of numbers in matrix 1 : 8

Enter value of numbers in matrix 1 : 4

Numbers entered are :

6 7

8 6

8 4

Enter value of numbers in matrix 2 : 1

Enter value of numbers in matrix 2 : 2

Enter value of numbers in matrix 2 : 3

Enter value of numbers in matrix 2 : 2

Enter value of numbers in matrix 2 : 3

Enter value of numbers in matrix 2 : 4

Numbers entered are :

1 2

3 2

3 4

The matrix subraction of the two matrix is :

5 5

5 4

5 0

**4. To print the following patterns using NESTED-FOR Loop**

**PROGRAM : A.PRINTING \***

#include<stdio.h>

#include<conio.h>

void main()

{

int i,j=0,space;

for(i=0;i<3;i++)

{

for(space=1;space<3-i;space++)

{

printf(" ");

}

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

{

printf("\* ");

}

printf("\n");

}

getch();

}

**OUTPUT :**

\*

\* \*

\* \* \*

**PROGRAM : B.PRINTING 1**

#include<stdio.h>

#include<conio.h>

void main()

{

int i,j=0,space,n=1;

for(i=1;i<4;i++)

{

for(space=1;space<4-i;space++)

{

printf(" ");

}

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

{

printf("%d ",i);

}

printf("\n");

}

getch();

}

**OUTPUT :**

1

2 2

3 3 3

**5. To find factorial of a number using function**

**PROGRAM : 1.No return, no argument**

#include<stdio.h>

#include<conio.h>

void factorial(void);

void main()

{

factorial();

getch();

}

void factorial(void)

{

int i,num,fact=1;

printf("Enter an integer number : ");

scanf ("%d", &num);

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

{

fact=fact\*i;

}

printf ("Factorial of given number is = %d\n",fact);

getch();

}

**OUTPUT :**

Enter an integer number : 5

Factorial of given number is = 120

**PROGRAM : 2. With return, no argument**

//with return no argument

#include<stdio.h>

#include<conio.h>

int factorial(void);

void main()

{

int d;int f;

d=factorial();

printf("Factorial = %d\n",d);

return 0;

getch();

}

int factorial()

{

int i=1,f=1,n;

printf("Enter an integer number : ");

scanf("%d",&n);

while(i<=n)

{

f=f\*i;

i++;

}

return f;

}

**OUTPUT :**

Enter an integer number : 5

Factorial = 120

**PROGRAM : 3.No written with argument**

//No written with argument

#include<stdio.h>

#include<conio.h>

void factorial(int,int,int);

void main()

{

int i=1,f=1,n;

printf("Enter an integer number : ");

scanf("%d",&n);

factorial(i,f,n);

getch();

}

void factorial(int i,int f,int n)

{

while(i<=n)

{

f=f\*i;

i++;

}

printf("Factorial = %d",f);

}

**OUTPUT :**

Enter an integer number : 5

Factorial = 120

**PROGRAM : 4.With return with argument**

//With return with argument

#include<stdio.h>

#include<conio.h>

int factorial(int,int);

int main()

{

int k,f,n;

printf("Enter an integer number : ");

scanf("%d",&n);

k=factorial(n,f);

printf("Factorial = %d\n",k);

return 0;

getch();

}

int factorial(int n,int f)

{

int i=1;

f=1;

while(i<=n)

{

f=f\*i;

i++;

}

return f;

}

**OUTPUT :**

Enter an integer number : 5

Factorial = 120

**6. To print Fibonacci series up to 20**

**PROGRAM :**

#include<stdio.h>

#include<conio.h>

void main()

{

int I,a=0,b=1,x;

printf("Fibonacci Series: ");

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

{

printf("%d,",t1);

x= a+b;

a=b;

b=x;

}

getch();

}

**OUTPUT :**

Fibonacci Series: 0,1,1,2,3,5,8,13,21,34,55,89,144,233,377,610,987,1597,2584,4181,

**7. To display use of (size of) operator**

**PROGRAM :**

#include<stdio.h>

#include<conio.h>

void main()

{

int a;

float b;

double c;

char d;

printf("Size of int = %lu bytes \n",sizeof(a));

printf("Size of float = %lu bytes \n",sizeof(b));

printf("Size of double = %lu bytes \n",sizeof(c));

printf("Size of char = %lu bytes \n",sizeof(d));

getch();

}

**OUTPUT :**

Size of int = 4 bytes

Size of float = 4 bytes

Size of double = 8 bytes

Size of char = 1 bytes

**8. To reverse the given number**

**PROGRAM :**

//Interchanging of order of numbers

#include <stdio.h>

#include<conio.h>

#include <string.h>

int main()

{

char a[2], b[2];

printf("Enter a number to be reversed : ");

scanf("%s",a);

strcpy(b,a);

strrev(b);

printf("The reversed number is %s",b);

getch();

}

**OUTPUT :**

Enter a number to be reversed : 2976

The reversed number is 6792

**9. To check entered number is Amstrong number or not**

**PROGRAM :**

//To check if the number is amstrong or not

#include <stdio.h>

#include<conio.h>

int main()

{

int num,a, remainder, n = 0;

float result = 0.0;

printf("Enter an integer: ");

scanf("%d", &num);

a= num;

for (a=num;a!= 0;++n)

{

a/= 10;

}

for (a= num;a!= 0;a/= 10)

{

remainder=a% 10;

result+= pow(remainder,n);

}

if((int)result == num)

{

printf("%d is an Armstrong number.", num);

}

else

{

printf("%d is not an Armstrong number.", num);

}

getch();

}

**OUTPUT :**

Enter an integer: 407

407 is an Armstrong number.

**10. To check if number is palindrome or not**

**PROGRAM :**

//Check if the Number entered is palindrome or not

#include <stdio.h>

#include<conio.h>

#include <string.h>

int main()

{

char a[100], b[100];

printf("Enter a string to check if it's a palindrome : ");

gets(a);

strcpy(b,a);

strrev(b);

if(strcmp(a,b)==0)

{

printf("The string is a palindrome.\n");

}

else

{

printf("The string isn't a palindrome.\n");

}

getch();

}

**OUTPUT :**

Enter a string to check if it's a palindrome : 121

The string is a palindrome.

**11. To calculate find sum of each rows and columns of a 3x3**

**Matrix**

**PROGRAM :**

//Program to find sum of each row and column of 3 by 3 matrix

#include<stdio.h>

#include<conio.h>

void main()

{

int a[3][3],i,j,row1,row2,row3,col1,col2,col3;

for(i=0;i<3;i++)

{

for(j=0;j<3;j++)

{

printf("Enter value of numbers is matrix : ");

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

}

}

printf("Numbers entered are :\n");

for(i=0;i<3;i++)

{

for(j=0;j<3;j++)

{

printf("%d\t",a[i][j]);

}

printf("\n");

}

row1=a[0][0]+a[0][1]+a[0][2];

row2=a[1][0]+a[1][1]+a[1][2];

row3=a[2][0]+a[2][1]+a[2][2];

printf("Sum of Row 1 is %d\n",row1);

printf("Sum of Row 2 is %d\n",row2);

printf("Sum of Row 3 is %d\n",row3);

col1=a[0][0]+a[1][0]+a[2][0];

col2=a[0][1]+a[1][1]+a[2][1];

col3=a[0][2]+a[1][2]+a[2][2];

printf("Sum of Column 1 is %d\n",col1);

printf("Sum of Column 2 is %d\n",col2);

printf("Sum of Column 3 is %d\n",col3);

getch();

}

**OUTPUT :**

Enter value of numbers is matrix : 1

Enter value of numbers is matrix : 2

Enter value of numbers is matrix : 3

Enter value of numbers is matrix : 4

Enter value of numbers is matrix : 5

Enter value of numbers is matrix : 6

Enter value of numbers is matrix : 7

Enter value of numbers is matrix : 8

Enter value of numbers is matrix : 9

Numbers entered are :

1 2 3

4 5 6

7 8 9

Sum of Row 1 is 6

Sum of Row 2 is 15

Sum of Row 3 is 24

Sum of Column 1 is 12

Sum of Column 2 is 15

Sum of Column 3 is 18