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CS-1

212201002

**Linear Array**

#include <iostream>

using namespace std;

int main()

{

int row, col;

cout << "Input number of Rows :";

cin >> row;

cout << "Input number of Columns :";

cin >> col;

cout << endl;

int a[row][col];

for (int i = 0; i < row; i++)

{

for (int j = 0; j < col; j++)

{

cout << "Input index " << i << "x" << j << " :: ";

cin >> a[i][j];

}

}

cout << endl;

for (int i = 0; i < row; i++)

{

for (int j = 0; j < col; j++)

{

cout << a[i][j] << "\t";

}

cout << endl;

}

system("pause");

return 0;

}

#include <iostream>

using namespace std;

int main(){

char chl[26];

char chu[26];

char temp = 'a';

char temp1 = 'A';

for(int i = 0 ; i < 26 ; i++){

chl[i] = temp;

chu[i] = temp1;

temp++;

temp1++;

}

for(int i = 0 ; i < 26 ; i++){

if(chl[i]=='a'||chl[i]=='e'||chl[i]=='i'||chl[i]=='o'||chl[i]=='u'){

cout << "There is a vowel at " << i << " :: " << chl[i] << endl;

break;

}else{

cout << "There is a consonant at " << i << " :: " << chl[i] << endl;

}

if(chu[i]=='A'||chu[i]=='E'||chu[i]=='I'||chu[i]=='O'||chu[i]=='U'){

cout << "There is a vowel at " << i << " :: " << chu[i] << endl;

break;

}else{

cout << "There is a consonant at " << i << " :: " << chu[i] << endl;

}

}

system("pause");

return 0;

}

#include <iostream>

using namespace std;

void input(int[]);

void output(int[]);

int main()

{

int arr[10];

input(arr);

cout << "Output: " << endl;

output(arr);

system("pause");

return 0;

}

void input(int arr[]){

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

cout << "Enter index: " << i << " :: ";

cin >> arr[i];

}

}

void output(int arr[]){

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

cout << "Value of index: " << i << " :: " << arr[i] << endl;

}

}

#include <iostream>

using namespace std;

void del(int[], int);

void display(int[], int);

void swap(int &, int &);

int main()

{

int size;

size = 12;

int arr[size] = {7, 2, 1, 2, 89, 4, 147, 16, 37, 132, 124, 111};

cout << "Before Deleting :: " << endl;

display(arr, size);

del(arr, size);

cout << "After Deleting :: " << endl;

display(arr, size);

system("pause");

return 0;

}

void del(int a[], int s)

{

int ind = -1;

cout << "Enter the index to delete :: ";

cin >> ind;

if (ind >= s)

{

cout << "Index out of bounds !" << endl;

return;

}

else

{

for (int i = ind; i < s - 1; i++)

{

swap(a[i], a[i + 1]);

}

a[s - 1] = 0;

}

}

void swap(int &a, int &b)

{

int temp;

temp = a;

a = b;

b = temp;

}

void display(int arr[], int s)

{

for (int i = 0; i < s; i++)

{

cout << arr[i] << " ";

}

cout << endl;

}

#include <iostream>

using namespace std;

int main()

{

int space = 0, word = 0;

char str[50] = "Hello World Programming Rocks !";

for (int i = 0; str[i] != '\0'; i++)

{

if (str[i] == ' ')

{

space++;

}

else

{

word++;

}

}

cout << "Spaces :: " << space << endl;

cout << "Words :: " << word << endl;

cout << "Total Size :: " << space + word << endl;

system("pause");

return 0;

}

#include <iostream>

using namespace std;

void swap(char &, char &);

void reverse(char[]);

void display(char[]);

int main()

{

char str[50] = "Hello World Programing Rocks!";

cout << str << endl;

reverse(str);

display(str);

system("pause");

return 0;

}

void swap(char &a, char &b)

{

char temp;

temp = a;

a = b;

b = temp;

}

void reverse(char a[])

{

for (int i = 0; a[i] != '\0'; i++)

{

for (int j = i; a[j] != '\0'; j++)

{

swap(a[i], a[j]);

}

}

}

void display(char a[])

{

for (int i = 0; a[i] != '\0'; i++)

{

cout << a[i];

}

cout << endl;

}

#include <iostream>

using namespace std;

void display(char[]);

int main()

{

int l = 0;

bool flag = true;

char str[] = "Wh o hW";

for (int i = 0; str[i] != '\0'; i++)

{

l++;

}

l--;

for (int i = 0; str[i] != '\0'; i++)

{

if (str[i] != str[l--])

{

flag = false;

break;

}

}

if (flag)

{

cout << "Palindrome" << endl;

}

else

{

cout << "Not palindrome" << endl;

}

system("pause");

return 0;

}

void display(char a[])

{

for (int i = 0; a[i] != '\0'; i++)

{

cout << a[i];

}

cout << endl;

}

#include <iostream>

using namespace std;

int main()

{

char arr[20];

cout << "Input Anything! :: ";

cin.get(arr,20);

for (int i = 0; arr[i] != '\0'; i++)

{

cout << arr[i];

cout << i;

}

cout << endl;

system("pause");

return 0;

}

#include <iostream>

using namespace std;

int main()

{

char ch;

int tab[95];

for (int i = 0; i <= 95; i++)

{

tab[i] = i + 32;

}

cout << "\_\_\_\_\_OUTPUT\_\_\_\_\_" << endl<< endl;

cout << "Decimal\t\tChar" << endl;

for (int i = 0; i < 95; i++)

{

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

{

if (j == 0)

{

cout << tab[i] << "\t\t";

}

else

{

ch = tab[i];

cout << ch << " ";

}

}

cout << endl;

}

system("pause");

return 0;

}

#include <iostream>

using namespace std;

int main()

{

int size;

cout << "Input array size :: ";

cin >> size;

int arr[size];

for (int i = 0; i < size; i++)

{

cout << "Input Value at index " << i << " :: ";

cin >> arr[i];

}

cout << "\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_" << endl;

for (int i = 0; i < size; i++)

{

cout << "Value at index " << i << " :: " << arr[i] << endl;

}

system("pause");

return 0;

}

**2D-ARRAY**

#include <iostream>

using namespace std;

int main()

{

int row[2], col[2];

int opt;

cout << "Enter no. of rows of first Matrix :: ";

cin >> row[0];

cout << "Enter no. of columns of first Matrix :: ";

cin >> col[0];

float a[row[0]][col[0]];

cout << "First Array Created of size " << row[0] << "x" << col[0] << endl;

cout << endl;

cout << "Enter no. of rows of second Matrix :: ";

cin >> row[1];

cout << "Enter no. of columns of second Matrix :: ";

cin >> col[1];

float b[row[1]][col[1]];

cout << "Second Array Created of size " << row[1] << "x" << col[1] << endl;

cout << endl;

system("pause");

system("CLS");

do

{

system("CLS");

cout << "1 => Input Values to Matrices" << endl;

cout << "2 => Output Values of Matrices" << endl;

cout << "3 => Multiply AxB" << endl;

cout << "4 => Multiply BxA" << endl;

cout << "9 => QUIT COMPLETELY!" << endl;

cout << endl;

cout << "Enter Option :: ";

cin >> opt;

system("CLS");

cout << "Option " << opt << " selected!" << endl;

cout << endl;

switch (opt)

{

default:

cout << "Please Enter Correct Option!" << endl;

break;

case 1:

for (int i = 0; i < 2; i++)

{

cout << endl;

cout << "Input for Array " << i + 1 << " " << row[0] << "x" << col[0] << endl;

cout << endl;

for (int r = 0; r < row[i]; r++)

{

for (int c = 0; c < col[i]; c++)

{

if (i == 0)

{

cout << "Input index " << r << "x" << c << " ::";

cin >> a[r][c];

}

else if (i == 1)

{

cout << "Input index " << r << "x" << c << " ::";

cin >> b[r][c];

}

}

}

}

system("pause");

system("CLS");

break;

case 2:

for (int i = 0; i < 2; i++)

{

cout << "Output for Array " << i + 1 << " " << row[0] << "x" << col[0] << endl;

cout << endl;

for (int r = 0; r < row[i]; r++)

{

for (int c = 0; c < col[i]; c++)

{

if (i == 0)

{

cout << a[r][c] << "\t";

}

else if (i == 1)

{

cout << b[r][c] << "\t";

}

}

cout << endl;

}

cout << endl;

}

system("pause");

system("CLS");

break;

case 3:

{

if (col[0] == row[1])

{

cout << "Multiplication is Possible!" << endl;

float res0[row[0]][col[1]];

for (int i = 0; i < row[0]; i++)

{

for (int j = 0; j < col[1]; j++)

{

res0[i][j] = 0;

}

}

for (int i = 0; i < row[0]; i++)

{

for (int j = 0; j < col[1]; j++)

{

for (int k = 0; k < col[0]; k++)

{

res0[i][j] = res0[i][j] + (a[i][k] \* b[k][j]);

}

}

}

cout << "Product AxB ::" << endl;

for (int i = 0; i < row[0]; i++)

{

for (int j = 0; j < col[1]; j++)

{

cout << res0[i][j] << "\t";

}

cout << endl;

}

}

else

{

cout << "Multiplication is Not Possible!" << endl;

}

system("pause");

system("CLS");

}

break;

case 4:

{

if (col[1] == row[0])

{

cout << "Multiplication is Possible!" << endl;

float res1[row[1]][col[0]];

for (int i = 0; i < row[1]; i++)

{

for (int j = 0; j < col[0]; j++)

{

res1[i][j] = 0;

}

}

for (int i = 0; i < row[1]; i++)

{

for (int j = 0; j < col[0]; j++)

{

for (int k = 0; k < col[1]; k++)

{

res1[i][j] = res1[i][j] + (b[i][k] \* a[k][j]);

}

}

}

cout << "Product BxA ::" << endl;

for (int i = 0; i < row[1]; i++)

{

for (int j = 0; j < col[0]; j++)

{

cout << res1[i][j] << "\t";

}

cout << endl;

}

}

else

{

cout << "Multiplication is Not Possible!" << endl;

}

system("pause");

system("CLS");

}

break;

case 9:

exit(0);

break;

}

} while (true);

system("pause");

return 0;

}

#include <iostream>

using namespace std;

int main()

{

int row, col, opt, temp;

cout << "Enter Number of Rows :: ";

cin >> row;

cout << "Enter Number of Columns :: ";

cin >> col;

int arr[row][col];

cout << row << "x" << col << " Array Created!" << endl;

system("pause");

system("CLS");

do

{

cout << "1 ==> Input Array!" << endl;

cout << "2 ==> Output Array!" << endl;

cout << "3 ==> Sort Array in Ascending order!" << endl;

cout << "4 ==> Sort Array in Descending order!" << endl;

cout << "9 ==> QUIT!" << endl;

cout << endl;

cout << "Enter Option :: ";

cin >> opt;

system("CLS");

cout << "Option Selected :: " << opt << endl;

cout << endl;

switch (opt)

{

default:

cout << "Enter Correct Option!" << endl;

break;

case 1:

cout << "Input :" << endl;

cout << endl;

for (int i = 0; i < row; i++)

{

for (int j = 0; j < col; j++)

{

cout << "Input Index " << i << "x" << j << " :: ";

cin >> arr[i][j];

}

}

cout << endl

<< "Input Successful!" << endl;

system("pause");

system("CLS");

break;

case 2:

cout << "Output :" << endl;

label1:

cout << endl;

for (int i = 0; i < row; i++)

{

for (int j = 0; j < col; j++)

{

cout << arr[i][j] << "\t";

}

cout << endl;

}

system("pause");

system("CLS");

break;

case 3:

cout << "Ascending Order : " << endl;

for (int i = 0; i < row; i++)

{

for (int j = 0; j < col; j++)

{

for (int k = i; k < row; k++)

{

for (int l = 0; l < col; l++)

{

if (k == i && l < j)

{

continue;

}

if (arr[i][j] > arr[k][l])

{

temp = arr[i][j];

arr[i][j] = arr[k][l];

arr[k][l] = temp;

}

}

}

}

}

goto label1;

break;

case 4:

cout << "Descending Order : " << endl;

for (int i = 0; i < row; i++)

{

for (int j = 0; j < col; j++)

{

for (int k = i; k < row; k++)

{

for (int l = 0; l < col; l++)

{

if (k == i && l < j)

{

continue;

}

if (arr[i][j] < arr[k][l])

{

temp = arr[i][j];

arr[i][j] = arr[k][l];

arr[k][l] = temp;

}

}

}

}

}

goto label1;

break;

case 9:

exit(0);

break;

}

} while (true);

system("pause");

return 0;

}

#include <iostream>

using namespace std;

int main(){

int row, col;

cout << "Input Row :: ";

cin >> row;

cout << "Input Col :: ";

cin >> col;

int arr[row][col];

cout << row << "x" << col << " Matrix Created!" << endl;

for (int i = 0; i < row; i++){

for (int j = 0; j < col; j++){

cout << i << "x" << j << " :: ";

cin >> arr[i][j];

}

}

for (int i = 0; i < row; i++){

for (int j = 0; j < col; j++){

cout << arr[i][j] << "\t";

}

cout << endl;

}

system("pause");

return 0;

}

#include <iostream>

using namespace std;

int main()

{

unsigned int row, col;

cout << "Enter Number of Rows :: ";

cin >> row;

cout << "Enter Number of Columns :: ";

cin >> col;

int arr[row][col];

cout << row << "x" << col << " Matrix Created!" << endl;

cout << "\_\_\_\_\_INPUT\_\_\_\_\_" << endl;

for (int i = 0; i < row; i++)

{

for (int j = 0; j < col; j++)

{

cout << "Input " << i << "x" << j << " :: ";

cin >> arr[i][j];

}

}

cout << "\_\_\_\_\_OUTPUT\_\_\_\_\_" << endl;

for (int i = 0; i < row; i++)

{

for (int j = 0; j < col; j++)

{

cout << arr[i][j] << " ";

}

cout << endl;

}

system("pause");

return 0;

}

#include <iostream>

using namespace std;

int main()

{

int arr[10][10], rows, cols, i, j;

cout << "\n Enter Rows for Array (Max 10) : ";

cin >> rows;

cout << "\n Enter Columns for Array (Max 10) : ";

cin >> cols;

cout << "\n Enter " << rows << "\*" << cols << " Array Elements : \n";

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

{

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

{

cout << " ";

cin >> arr[i][j];

}

}

cout << "\n Two Dimensional Array is : \n";

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

{

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

{

cout << " " << arr[i][j] << " ";

}

cout << "\n";

}

system("pause");

return 0;

}

#include <iostream>

using namespace std;

int main()

{

int a[3][3], r, c;

cout << "Enter 9 numbers :: ";

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

{

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

{

cin >> a[r][c];

}

}

cout << "Even Numbers :: ";

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

{

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

{

if (a[r][c] % 2 == 0)

{

cout << a[r][c] << " ";

}

}

}

cout << endl;

system("pause");

return 0;

}

#include <iostream>

using namespace std;

int main()

{

float a[2][2], b[2][2], result[2][2];

cout << "Enter elements of 1st matrix :: " << endl;

for (int i = 0; i < 2; ++i)

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

{

cout << "Enter " << i << " " << j << " :: ";

cin >> a[i][j];

}

cout << "Enter elements of 2nd matrix :: " << endl;

for (int i = 0; i < 2; ++i)

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

{

cout << "Enter " << i << " " << j << " :: ";

cin >> b[i][j];

}

for (int i = 0; i < 2; ++i)

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

{

result[i][j] = a[i][j] + b[i][j];

}

cout << "Sum of array :: " << endl;

for (int i = 0; i < 2; ++i)

{

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

{

cout << result[i][j] << " ";

}

cout << endl;

}

system("pause");

return 0;

}

#include <iostream>

using namespace std;

int main()

{

int arr[3][3], i, j, Odd[9];

cout << "Enter 9 values for 2-D array " << endl;

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

{

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

{

cin >> arr[i][j];

}

}

cout << "Values for 2D array are " << endl;

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

{

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

{

cout << arr[i][j] << "\t";

}

cout << endl;

}

cout << "Odd numbers are " << endl;

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

{

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

{

if (arr[i][j] % 2 != 0)

{

cout << arr[i][j] << "\t";

}

}

}

system("pause");

return 0;

}

#include <iostream>

using namespace std;

int main()

{

int arr[3][3], i, j, even[9];

cout << "Enter 9 values for 2-D array " << endl;

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

{

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

{

cin >> arr[i][j];

}

}

cout << "Vlaues for 2D array are " << endl;

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

{

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

{

cout << arr[i][j] << "\t";

}

cout << endl;

}

cout << "Even numbers are " << endl;

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

{

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

{

if (arr[i][j] % 2 == 0)

{

cout << arr[i][j] << "\t";

}

}

}

system("pause");

return 0;

}

#include <iostream>

using namespace std;

int main()

{

int A[3][3], transpose[3][3], i, j;

cout << "Enter matrix elements " << endl;

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

{

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

{

cin >> A[i][j];

}

}

cout << "Matrix is " << endl;

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

{

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

{

cout << A[i][j] << "\t";

}

cout << endl;

}

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

{

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

{

transpose[j][i] = A[i][j];

}

}

cout << "Transpose matrix is " << endl;

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

{

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

{

cout << transpose[i][j] << "\t";

}

cout << endl;

}

system("pause");

return 0;}

**FUNCTIONS**

#include <iostream>

using namespace std;

struct dis

{

int feet;

float inches;

};

void input(dis &);

void correction(dis &);

void output(dis &);

dis sum(dis &, dis &);

int main()

{

dis d1, d2, d3;

input(d1);

input(d2);

cout << "Distance 1 :: ";

output(d1);

cout << "Distance 2 :: ";

output(d2);

d3 = sum(d1, d2);

cout << "Sum :: ";

output(d3);

system("pause");

return 0;

}

void input(dis &d)

{

cout << "Enter distance in Feet :: ";

cin >> d.feet;

cout << "Enter distance in Inches :: ";

cin >> d.inches;

correction(d);

}

void correction(dis &d)

{

while (d.inches >= 12)

{

d.inches -= 12;

d.feet++;

}

}

void output(dis &d)

{

cout << d.feet << "\'"

<< "-" << d.inches << "\''" << endl

<< endl;

}

dis sum(dis &da, dis &db)

{

dis d;

d.feet = da.feet + db.feet;

d.inches = da.inches + db.inches;

return d;

}

#include <iostream>

using namespace std;

int maxArr(int[]);

int main()

{

int arr[] = {1, 7, 2, 2, 89, 42, 147, 16, 37, 132, 124, 111};

cout << "Biggest Num :: " << maxArr(arr) << endl;

system("pause");

return 0;

}

int maxArr(int a[])

{

int max = a[0];

for (int i = 1; i < 12; i++)

{

if (max < a[i])

{

max = a[i];

}

}

return max;

}

#include <iostream>

using namespace std;

struct Time

{

unsigned int hours;

unsigned int minutes;

unsigned int seconds;

};

struct dis

{

unsigned int feet;

float inches;

};

void input\_dis(dis &);

void correct\_dis(dis &);

void output\_dis(dis &);

void input\_time(Time &);

void correct\_time(Time &);

void output\_time(Time &);

Time add(Time &, Time &);

Time cal(dis &, dis &, Time &);

int main()

{

Time t1, t2, t3, t4;

dis d1, d2, d3;

d3 = {1, 1};

cout << "\_Enter Current Time\_" << endl;

input\_time(t1);

cout << endl

<< "\_Enter Distance to the spot\_" << endl;

input\_dis(d1);

cout << endl

<< "\_Enter Step Size\_" << endl;

input\_dis(d2);

cout << endl

<< "\_Enter Step Time\_" << endl;

input\_time(t2);

t3 = cal(d1, d2, t2);

t4 = add(t1, t3);

cout << endl

<< "Current Time > ";

output\_time(t1);

cout << "Est Destination Time > ";

output\_time(t4);

cout << "Time Required > ";

output\_time(t3);

system("pause");

return 0;

}

void input\_dis(dis &d)

{

cout << "Enter distance in Feet :: ";

cin >> d.feet;

cout << "Enter distance in Inches :: ";

cin >> d.inches;

correct\_dis(d);

}

void correct\_dis(dis &d)

{

while (d.inches >= 12)

{

d.inches -= 12;

d.feet++;

}

while (d.inches < 0)

{

d.inches += 12;

d.feet--;

}

}

void output\_dis(dis &d)

{

cout << d.feet << "\'"

<< "-" << d.inches << "\''" << endl

<< endl;

}

void input\_time(Time &t)

{

cout << "Enter hours :: ";

cin >> t.hours;

cout << "Enter Minutes :: ";

cin >> t.minutes;

cout << "Enter Seconds :: ";

cin >> t.seconds;

correct\_time(t);

}

void correct\_time(Time &t)

{

while (t.seconds >= 60)

{

t.seconds -= 60;

t.minutes++;

}

while (t.minutes >= 60)

{

t.minutes -= 60;

t.hours++;

}

}

void output\_time(Time &t)

{

cout << t.hours << " : " << t.minutes << " : " << t.seconds << endl

<< endl;

}

Time cal(dis &da, dis &db, Time &t)

{

int steps = 0;

dis d, da\_temp;

da\_temp = da;

Time temp\_time = {0, 0, 0};

Time temp\_t = t;

while (true)

{

if (da\_temp.feet > 0)

{

da\_temp.feet -= db.feet;

}

if (da\_temp.inches > 0)

{

da\_temp.inches -= db.inches;

}

if (da\_temp.feet <= 0 && da\_temp.inches <= 0)

{

break;

}

steps++;

}

cout << endl

<< "Number of Steps Required :: " << steps << endl;

while (steps >= 0)

{

temp\_time.hours += temp\_t.hours;

temp\_time.minutes += temp\_t.minutes;

temp\_time.seconds += temp\_t.seconds;

steps--;

}

correct\_time(temp\_time);

return temp\_time;

}

Time add(Time &ta, Time &tb)

{

Time t;

t.hours = tb.hours + ta.hours;

t.minutes = tb.minutes + ta.minutes;

t.seconds = tb.seconds + ta.seconds;

correct\_time(t);

return t;

}

#include <iostream>

using namespace std;

void factArr(int[]);

int main()

{

int arr[] = {1, 2, 3, 4, 5, 6, 7};

factArr(arr);

system("pause");

return 0;

}

void factArr(int a[])

{

int fact = 1;

for (int i = 0; i < 7; i++)

{

for (int j = 1; j <= a[i]; j++)

{

fact \*= j;

}

cout << "Factorial of " << a[i] << " = " << fact << endl;

fact = 1;

}

}

#include <iostream>

using namespace std;

void swap(int &, int &);

void sort(int[]);

void display(int[]);

int main()

{

int arr[] = {1, 7, 2, 2, 89, 42, 147, 16, 37, 132, 124, 111};

cout << "Before Sorting :: " << endl;

display(arr);

sort(arr);

cout << "After Sorting :: " << endl;

display(arr);

system("pause");

return 0;

}

void sort(int arr[])

{

for (int i = 0; i < 12; i++)

{

for (int j = i + 1; j < 12; j++)

{

if (arr[i] > arr[j])

{

swap(arr[i], arr[j]);

}

}

}

}

void swap(int &a, int &b)

{

int temp;

temp = a;

a = b;

b = temp;

}

void display(int arr[])

{

for (int i = 0; i < 12; i++)

{

cout << arr[i] << " ";

}

cout << endl;

}

#include <iostream>

using namespace std;

float add(float, float);

float subtract(float, float);

float multiply(float, float);

float divide(float, float);

int main()

{

float a, b;

char option;

do

{

cout << endl;

cout << "Enter 2 number :: ";

cin >> a >> b;

cout << "1-Add\n2-Subtract\n3-Multiply\n4-Divide" << endl;

cout << "Option :: ";

cin >> option;

cout << endl;

switch (option)

{

case 'n':

exit(0);

break;

case '1':

cout << "Sum :: " << add(a, b);

break;

case '2':

cout << "Diff :: " << subtract(a, b);

break;

case '3':

cout << "Product :: " << multiply(a, b);

break;

case '4':

cout << "Quotient :: " << divide(a, b);

break;

default:

cout << "Unknown option" << endl;

break;

}

cout << endl;

} while (option != 'n');

system("pause");

return 0;

}

float add(float a, float b)

{

return a + b;

}

float subtract(float a, float b)

{

return a - b;

}

float multiply(float a, float b)

{

return a \* b;

}

float divide(float a, float b)

{

return a / b;

}

#include <iostream>

using namespace std;

int &SetZero(int &, int &);

int main()

{

int a, b;

cout << "Enter 2 number :: ";

cin >> a >> b;

cout << "Before Call :: " << endl;

cout << a << endl;

cout << b << endl;

SetZero(a, b) = 0;

cout << "After Call :: " << endl;

cout << a << endl;

cout << b << endl;

system("pause");

return 0;

}

int &SetZero(int &a, int &b)

{

return (a < b) ? a : b;

}

#include <iostream>

using namespace std;

bool isPrime(int num);

int main()

{

int num = 0;

int p\_num, cnt = 1;

cout << "Enter a number :: ";

cin >> num;

p\_num = num - 1;

for (int i = 0; i < num; i++)

{

if (p\_num + cnt == num)

{

if (isPrime(p\_num) && isPrime(cnt))

{

cout << p\_num << " + " << cnt << " = " << num << endl;

}

}

p\_num--;

cnt++;

}

system("pause");

return 0;

}

bool isPrime(int num)

{

if (num == 1)

{

return false;

}

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

{

if (num % i == 0)

{

return false;

}

}

return true;

}

#include <iostream>

using namespace std;

int SGPA(float);

int main()

{

float marks;

float avg;

int grade;

cout << "Enter Marks :: ";

cin >> marks;

avg = marks \* 100 / 500;

cout << "Grade :: " << SGPA(avg) << endl;

system("pause");

return 0;

}

int SGPA(float avg)

{

if (avg >= 90 && avg <= 100)

{

return 4;

}

else if (avg >= 70 && avg <= 89)

{

return 3;

}

else if (avg >= 50 && avg <= 69)

{

return 2;

}

else if (avg >= 40 && avg <= 49)

{

return 1;

}

else if (avg >= 0 && avg <= 39)

{

return 0;

}

else

{

cout << "Error!" << endl;

}

}

#include <iostream>

using namespace std;

void swap(int &, int &);

void select(int[]);

void display(int[]);

int main()

{

int arr[] = {7, 2, 1, 2, 89, 4, 147, 16, 37, 132, 124, 111};

cout << "Before Sorting :: " << endl;

display(arr);

select(arr);

cout << "After Sorting :: " << endl;

display(arr);

system("pause");

return 0;

}

void select(int a[])

{

bool flag = false;

int index;

int lowest = a[0];

for (int i = 0; i < 12; i++)

{

flag = false;

lowest = a[i];

for (int j = i + 1; j < 12; j++)

{

if (lowest > a[j])

{

lowest = a[j];

flag = true;

index = j;

}

}

if (flag == true)

{

swap(a[index], a[i]);

}

}

}

void swap(int &a, int &b)

{

int temp;

temp = a;

a = b;

b = temp;

}

void display(int arr[])

{

for (int i = 0; i < 12; i++)

{

cout << arr[i] << " ";

}

cout << endl;

}

**RECURSION**

#include <iostream>

using namespace std;

int factorial(int);

int main()

{

int num;

cout << "Enter a number :: ";

cin >> num;

cout << "Factorial = " << factorial(num) << endl;

system("pause");

return 0;

}

int factorial(int a)

{

if (a == 1)

{

return 1;

}

else

{

return a \* factorial(a - 1);

}

}

#include <iostream>

using namespace std;

int rev(int num, int re)

{

if (num == 0)

{

return re;

}

else

{

re = (re \* 10) + (num % 10);

return rev(num / 10, re);

}

}

int main()

{

int num = 0;

int re = 0;

cout << "Enter a number :: ";

cin >> num;

re = rev(num, 0);

cout << "Number :: " << num << endl;

cout << "Reverse :: " << re << endl;

if (re == num)

{

cout << "Palindrome" << endl;

}

else

{

cout << "Not Palindrome" << endl;

}

system("pause");

return 0;

}

#include <iostream>

using namespace std;

int cnt(int num, int cn)

{

if (num == 0)

{

return cn;

}

else

{

return cnt(num / 10, ++cn);

}

}

int main()

{

int num;

cout << "Enter a number ::";

cin >> num;

cout << "Number of digits: " << cnt(num, 0) << endl;

system("pause");

return 0;

}

#include <iostream>

using namespace std;

int isPrime(int o\_num, int cn, int c)

{

if (cn == o\_num)

{

return c;

}

if (o\_num % cn == 0)

{

c++;

}

return isPrime(o\_num, ++cn, c);

}

int main()

{

int num;

cout << " Enter a Number :: ";

cin >> num;

if (isPrime(num, 2, 0) == 0)

{

cout << "Prime!" << endl;

}

else

{

cout << "Not Prime!" << endl;

}

system("pause");

return 0;

}

#include <iostream>

using namespace std;

int sum(int num[], int cn, int sm)

{

if (cn == 7)

{

return sm;

}

else

{

sm += num[cn];

return sum(num, ++cn, sm);

}

}

int main()

{

int num[] = {1, 2, 3, 4, 5, 6, 7};

cout << "Sum of array :: " << sum(num, 0, 0) << endl;

system("pause");

return 0;

}

#include <iostream>

using namespace std;

int pw(int n, int p)

{

if (p == 0)

{

return 1;

}

else

{

return n \* pw(n, --p);

}

}

int main()

{

int base = 0, power = 0;

cout << "Enter Base :: ";

cin >> base;

cout << "Enter a power :: ";

cin >> power;

cout << base << "^" << power << " :: " << pw(base, power) << endl;

system("pause");

return 0;

}

#include <iostream>

using namespace std;

int hcf(int n1, int n2)

{

if (n2 == 0)

return n1;

else

{

return hcf(n2, n1 % n2);

}

}

int main()

{

int num1 = 0, num2 = 0;

cout << "Enter 2 numbers :: ";

cin >> num1 >> num2;

cout << "HCF :: " << hcf(num1, num2) << endl;

system("pause");

return 0;

}

#include <iostream>

using namespace std;

int cnt(int num, int sum)

{

if (num == 0)

{

return sum;

}

else

{

sum += num % 10;

return cnt(num / 10, sum);

}

}

int main()

{

int num;

cout << "Enter a number ::";

cin >> num;

cout << "Sum of digits: " << cnt(num, 0) << endl;

system("pause");

return 0;

}

#include <iostream>

using namespace std;

void rf(int n)

{

if (n > 10)

return;

else

{

cout << "Call Number " << n << endl;

rf(n = n + 1);

}

}

int main()

{

int num = 0;

rf(num);

system("pause");

return 0;

}

#include <iostream>

using namespace std;

void fun(int n)

{

if (n == 0)

{

return;

}

fun(n / 2);

cout << n % 2;

}

int main()

{

int num = 0;

cout << "Enter a number :: ";

cin >> num;

fun(num);

cout << endl;

system("pause");

return 0;

}