//------------------------------------------------------------------

// File name: Exercise\_1.cpp

// Assign ID:

// Due Date: 09/06/24 at 11pm

//

// Purpose: The sum of integers from A to 500.

//

// Author: Mr. KEO Sopahnit

//------------------------------------------------------------------

#include <iostream>

using namespace std;

int main() {

//1. Store

int num, total = 0;

const int NUMBER = 500;

//.2 Input

cout << "Enter a number from 0 to 500: ";

cin >> num;

//3. Process

for (int i = num; i <= NUMBER; ++i) {

total += i;

}

//4. Output

cout << "The sum of numbers from " << num << " to " << NUMBER << " is: " << total << endl;

return 0;

}

//------------------------------------------------------------------

// File name: Exercise\_2.cpp

// Assign ID:

// Due Date: 09/06/24 at 11pm

//

// Purpose: calculates and outputs the value of x to the power of y.

//

// Author: Mr. KEO Sopahnit

//------------------------------------------------------------------

#include <iostream>

using namespace std;

int main(){

//1. store

int x,y;

char choice;

do{

double result = 1.0;

//2. Input

cout<<"Enter the base inteder x: ";

cin>>x;

cout<<"Enter the exponent intergere y: ";

cin>>y;

//3. process

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

result \*=x;

}

//4. Output

cout<< x << " power of "<< y<<" is "<< result<< endl;

cout<<"Do you want to calculate more? (y/n): ";

cin>>choice;

}while(choice =='y'||choice =='Y');

return 0;

}

//------------------------------------------------------------------

// File name: Exercise\_3.cpp

// Assign ID:

// Due Date: 09/06/24 at 11pm

//

// Purpose: calculates and outputs the value of x to the power of y.

//

// Author: Mr. KEO Sopahnit

//------------------------------------------------------------------

#include <iostream>

using namespace std;

int main() {

//1. Store

double sum = 0;

const int start = 1;

const int end = 1000;

double average;

//2. Innput

//3. Process

for (int i = start; i <= end; ++i) {

sum += i;

average = sum / (end - start + 1);

cout <<average<<endl;

}

//4. Output

cout << "The average of integers from " << start << " to " << end << " is: " << average << endl;

return 0;

}

//------------------------------------------------------------------

// File name: Exercise\_4.cpp

// Assign ID:

// Due Date: 09/06/24 at 11pm

//

// Purpose: Find the product of all integers from A to 20 .

//

// Author: Mr. KEO Sopahnit

//------------------------------------------------------------------

#include<iostream>

using namespace std;

int main(){

//1. store

int A;

long product = 1;

//2. Input

//3. process

do{

cout << "Enter an integer A (1 <= A <= 20): ";

cin >> A;

}while(A<1||A>20);

for (int i = A; i <= 20; ++i) {

product \*= i;

}

//4. Output

cout << "The product of integers from " << A << " to 20 is: " << product << endl;

return 0;

}

//------------------------------------------------------------------

// File name: Exercise\_5.cpp

// Assign ID:

// Due Date: 09/06/24 at 11pm

//

// Purpose: A program that displays a multiplication table .

//

// Author: Mr. KEO Sopahnit

//------------------------------------------------------------------

#include <iostream>

using namespace std;

int main() {

//1. Store

int k;

//2. Input

cout << "Enter a number to display its multiplication table: ";

cin >> k;

cout << "Multiplication table for " << k << ":\n";

//3. Process

for (int i = 2; i <= 10; ++i) {

//4. Output

cout << k << " x " << i << " = " << (k \* i) << endl;

}

return 0;

}

//------------------------------------------------------------------

// File name: Exercise\_6.cpp

// Assign ID:

// Due Date: 09/06/24 at 11pm

//

// Purpose: Display all numbers from zero to a number entered by the user.

//

// Author: Mr. KEO Sopahnit

//------------------------------------------------------------------

#include <iostream>

using namespace std;

int main() {

//1. Store

int upperLimit;

//2. Input

cout << "Enter a positive integer: ";

cin >> upperLimit;

while (upperLimit < 0) {

cout << "Invalid input. Please enter a non-negative integer: ";

cin >> upperLimit;

}

cout << "Numbers from 0 to " << upperLimit << ":\n";

//3. Process

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

cout << i << " ";

}

cout << endl;

return 0;

}

//------------------------------------------------------------------

// File name: Exercise\_7.cpp

// Assign ID:

// Due Date: 09/06/24 at 11pm

//

// Purpose: The user enters two boundaries of range; display to the screen all numbers from this range.

//

// Author: Mr. KEO Sopahnit

//------------------------------------------------------------------

#include <iostream>

using namespace std;

int main() {

//1. store

int start, end;

//2. Innput

cout << "Enter the first boundary of the range: ";

cin >> start;

cout << "Enter the second boundary of the range: ";

cin >> end;

//3. Process

if (start > end) {

swap(start, end);

}

cout << "\nNumbers in the range from " << start << " to " << end << ":\n";

for (int i = start; i <= end; ++i) {

cout << i << " ";

}

cout << endl;

cout << "\nEven numbers in the range:\n";

for (int i = start; i <= end; ++i) {

if (i % 2 == 0) {

cout << i << " ";

}

}

cout << endl;

cout << "\nOdd numbers in the range:\n";

for (int i = start; i <= end; ++i) {

if (i % 2 != 0) {

cout << i << " ";

}

}

cout << endl;

cout << "\nNumbers divisible by 7 in the range:\n";

for (int i = start; i <= end; ++i) {

if (i % 7 == 0) {

cout << i << " ";

}

}

cout << endl;

return 0;

}

//------------------------------------------------------------------

// File name: Exercise\_7.cpp

// Assign ID:

// Due Date: 09/06/24 at 11pm

//

// Purpose: The user enters two boundaries of range; display to the screen all numbers from this range.

//

// Author: Mr. KEO Sopahnit

//------------------------------------------------------------------

//------------------------------------------------------------------

// File name: Exercise\_7.cpp

// Assign ID:

// Due Date: 09/06/24 at 11pm

//

// Purpose: The user enters two boundaries of range; display to the screen all numbers from this range.

//

// Author: Mr. KEO Sopahnit

//------------------------------------------------------------------

#include <iostream>

using namespace std;

int main() {

//1. Store

int start, end;

long long sum = 0;

//.2 Input

cout << "Enter the first boundary of the range: ";

cin >> start;

cout << "Enter the second boundary of the range: ";

cin >> end;

//3. Process

if (start > end) {

swap(start, end);

}

for (int i = start; i <= end; ++i) {

sum += i;

}

//4. Output

cout << "The sum of numbers from " << start << " to " << end << " is: " << sum << endl;

return 0;

}

//------------------------------------------------------------------

// File name: Exercise\_8.cpp

// Assign ID:

// Due Date: 09/06/24 at 11pm

//

// Purpose: The user enters two range boundaries. Calculate the sum of all numbers of range.

//

// Author: Mr. KEO Sopahnit

//------------------------------------------------------------------

#include <iostream>

using namespace std;

int main() {

//1. Store

int start, end;

long long sum = 0;

//.2 Input

cout << "Enter the first boundary of the range: ";

cin >> start;

cout << "Enter the second boundary of the range: ";

cin >> end;

//3. Process

if (start > end) {

swap(start, end);

}

for (int i = start; i <= end; ++i) {

sum += i;

}

//4. Output

cout << "The sum of numbers from " << start << " to " << end << " is: " << sum << endl;

return 0;

}

//------------------------------------------------------------------

// File name: Exercise\_9.cpp

// Assign ID:

// Due Date: 09/06/24 at 11pm

//

// Purpose: Calculate the sum of these numbers and output it to the screen.

//

// Author: Mr. KEO Sopahnit

//------------------------------------------------------------------

#include <iostream>

using namespace std;

int main() {

//1. Store

int number;

int sum = 0;

//2. Input

cout << "Enter numbers (enter 0 to stop):" << endl;

//3. Proces

do {

cin >> number;

sum += number;

} while (number != 0);

//4. Output

cout << "The sum of the entered numbers is: " << sum << endl;

return 0;

}