**Name: OMOIGBERALE KINGSLEY OSAMAKWE.**

**Class: HND 1.**

**Department: COMPUTING SCIENCE.**

**Course Code: COM 316.**

**Course Title: COMPUTER PRORAMMING USING C#.**

1. Write a c# program that prompt the user to input 3 numbers, the program should then output the numbers in ascending order

using System;

class Program {

static void Main() {

// Prompt user for input

Console.WriteLine("Enter three numbers:");

// Read input as strings

string input1 = Console.ReadLine();

string input2 = Console.ReadLine();

string input3 = Console.ReadLine();

// Parse strings to integers

int num1 = int.Parse(input1);

int num2 = int.Parse(input2);

int num3 = int.Parse(input3);

// Arrange numbers in ascending order

int[] numbers = { num1, num2, num3 };

Array.Sort(numbers);

// Output the sorted numbers

Console.WriteLine("Numbers in ascending order: " + numbers[0] + ", " + numbers[1] + ", " + numbers[2]);

}

}

2. Write a PHP function, smallest index, that takes as parameter an int array and its size and returns the index if the smallest element in the array. Also, Write a program to test your function.

<?php

function smallestIndex($array, $size) {

if ($size <= 0) {

return -1; // Return -1 for an empty array or invalid size

}

$minIndex = 0;

for ($i = 1; $i < $size; $i++) {

if ($array[$i] < $array[$minIndex]) {

$minIndex = $i;

}

}

return $minIndex;

}

// Test the function

$numbers = [5, 2, 8, 1, 4];

$size = count($numbers);

$index = smallestIndex($numbers, $size);

if ($index != -1) {

echo "The smallest element is at index $index.";

}

else {

echo "Invalid array size or empty array.";

}

?>

3. Write a C# program that prompts that prompts the user to input a string and outputs the string in uppercase(Use a Character array to store the string)

using System;

class Program

{

static void Main()

{

Console.WriteLine("Enter a string:");

string inputString = Console.ReadLine();

// Convert the string to uppercase using a character array

char[] charArray = inputString.ToCharArray();

for (int i = 0; i < charArray.Length; i++)

{

charArray[i] = Char.ToUpper(charArray[i]);

}

// Output the string in uppercase

string resultString = new string(charArray);

Console.WriteLine("String in uppercase: " + resultString);

}

}

4. Write a C# program to compute the addition of N by M matrices. Allow the user to determine the size of the row and column

using System;

class Program

{

static void Main()

{

Console.WriteLine("Enter the number of rows for matrices:");

int numRows = int.Parse(Console.ReadLine());

Console.WriteLine("Enter the number of columns for matrices:");

int numCols = int.Parse(Console.ReadLine());

int[,] matrix1 = ReadMatrix("Enter the elements of the first matrix:", numRows, numCols);

int[,] matrix2 = ReadMatrix("Enter the elements of the second matrix:", numRows, numCols);

int[,] resultMatrix = AddMatrices(matrix1, matrix2);

Console.WriteLine("Resultant Matrix (Sum of Matrices):");

PrintMatrix(resultMatrix);

}

static int[,] ReadMatrix(string prompt, int rows, int cols)

{

Console.WriteLine(prompt);

int[,] matrix = new int[rows, cols];

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

{

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

{

Console.Write($"Enter element at position [{i + 1},{j + 1}]: ");

matrix[i, j] = int.Parse(Console.ReadLine());

}

}

return matrix;

}

static int[,] AddMatrices(int[,] matrix1, int[,] matrix2)

{

int rows = matrix1.GetLength(0);

int cols = matrix1.GetLength(1);

int[,] resultMatrix = new int[rows, cols];

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

{

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

{

resultMatrix[i, j] = matrix1[i, j] + matrix2[i, j];

}

}

return resultMatrix;

}

static void PrintMatrix(int[,] matrix)

{

int rows = matrix.GetLength(0);

int cols = matrix.GetLength(1);

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

{

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

{

Console.Write(matrix[i, j] + " ");

}

Console.WriteLine();

}

}

}

5. Write a c# program that declares an array Alpha of 50 components of the type float. Initialise the array so that the first 25 components are equal to square three times the index variable. Output the array so that 10 elements per line are printed.

using System;

class Program

{

static void Main()

{

float[] Alpha = new float[50];

// Initialize the first 25 components

for (int i = 0; i < 25; i++)

{

Alpha[i] = (float)Math.Pow(i, 3) \* 3;

}

// Output the array with 10 elements per line

Console.WriteLine("Array Alpha:");

for (int i = 0; i < 50; i++)

{

Console.Write($"{Alpha[i],10:F2}");

if ((i + 1) % 10 == 0)

{

Console.WriteLine(); // Move to the next line after every 10 elements

}

}

}

}

6. Write a c# program that prompts a user to input a number. The program should then output the number an the message saying whether the number is positive, negative or zero.

using System;

class Program

{

static void Main()

{

Console.WriteLine("Enter a number:");

double number = double.Parse(Console.ReadLine());

if (number > 0)

{

Console.WriteLine($"{number} is a positive number.");

}

else if (number < 0)

{

Console.WriteLine($"{number} is a negative number.");

}

else

{

Console.WriteLine($"{number} is zero.");

}

}

}