**Chapter 2**

**1.**    **Declare several variables** by selecting for each one of them the most appropriate of the types **sbyte**, **byte**, **short**, **ushort**, **int**, **uint**, **long** and **ulong** in order to assign them the following values: 52,130; -115; 4825932; 97; -10000; 20000; 224; 970,700,000; 112; -44; -1,000,000; 1990; 123456789123456789.

// Declare some variables

ushort week = 52130;

sbyte oneweek = -115;

ulong hours = 4825932;

byte centuries = 97;

short name = -10000;

int surname = 20000;

byte city = 224;

short namesurname = 970;

short right = 970;

short left = 700;

sbyte top = 000;

short bottom = 112;

sbyte infront = -44;

int leftside = -1;

ulong behind = 123456789123456789;

// Print the result on the console

Console.WriteLine(week);

Console.WriteLine(oneweek);

Console.WriteLine(hours);

Console.WriteLine(centuries);

Console.WriteLine(name);

Console.WriteLine(surname);

Console.WriteLine(city);

Console.WriteLine(namesurname);

Console.WriteLine(right);

Console.WriteLine(left);

Console.WriteLine(top);

Console.WriteLine(bottom);

Console.WriteLine(infront);

Console.WriteLine(leftside);

Console.WriteLine(behind);

**2**.Which of the following values can be assigned to variables of type **float**, **double** and **decimal**: 5, -5.01, 34.567839023; 12.345; 8923.1234857; 3456.091124875956542151256683467?**.**

float Emri = 5f;

float mbiemri = -5.01f;

double adresa = 34.567839023;

float numri = 12.345f;

double kontakt = 8923.1234857;

decimal portfolio = 3456.091124875956542151256683467M;

Console.WriteLine ( Emri );

Console.WriteLine(mbiemri);

Console.WriteLine(adresa);

Console.WriteLine(numri);

Console.WriteLine(kontakt);

Console.WriteLine(portfolio);

**2.**Write a program, which **compares correctly** **two real numbers** with accuracy at least **0.000001**.

{

float num1 = 2.500001f;

float num2 = 0.5000001f;

float sum = 3.000011f;

bool equal = (num1 + num2) == sum;

Console.WriteLine(equal);

}

**4. Initialize** a variable of type **int** with a value of 256 in  
**hexadecimal** format (256 is 100 in a numeral system with base 16).

{

int x = 256; // decimal type

Console.WriteLine(x);

}

**5.** Declare a variable of type **char** and assign as a value the character, which has **Unicode** code, 72 (use the Windows calculator in order to find hexadecimal representation of 72).

char emri = '\u0072';

Console.WriteLine(emri);

**6.**  Declare a variable **isMale** of type **bool**and assign a value to it depending on your gender.

{

Console.WriteLine("What’s your gender ? For male type 1 for female type 2: ");

int Number = Convert.ToInt16(Console.ReadLine());

bool isMale = (Number == 1);

Console.WriteLine("You are a male: { 0}", isMale);

Console.ReadLine();

}

**7.** Declare two variables of type **string** with values "Hello" and "World". Declare a variable of type **object**. Assign to this variable the value obtained of concatenation of the two string variables (add space if necessary). Print the variable of type **object**.

{

string firstName = "Hello";

string lastName = "World";

object container1 = firstName + " " + lastName;

Console.WriteLine( container1 );

}

**8.** Declare two variables of type **string** and assign them values "Hello" and "World". Declare a variable of type **object** and assign to it the value obtained of concatenation of the two variables of type **string** (do not miss the space in the middle). Declare a third variable of type **string** and initialize it with the value of the variable of type **object** (you should use type casting).

{

string firstName = "Hello";

string lastName = "World";

object container1 = firstName + " " + lastName;

string awesome = container1.ToString();

Console.WriteLine(awesome);

}

**9.** Declare two variables of type **string** and assign them a value “**The "use" of quotations causes difficulties.**” (without the outer quotes). In one of the variables use quoted string and in the other do not use it.

string firstName = "The “use” of quotations causes difficulties.";

string lastName = "The use of quotations causes difficulties.";

Console.WriteLine(firstName + lastName);

**10.**  Write a program to print a figure in the shape of a **heart** by the sign "**o**".

{

Console.WriteLine(" o o. o o o ");

Console.WriteLine(" o o o ");

Console.WriteLine(" o o ");

Console.WriteLine(" o o ");

Console.WriteLine(" o o ");

Console.WriteLine(" o ");

Console.ReadKey();

}

**11.** Write a program that prints on the console **isosceles triangle** which sides consist of the copyright character "**©**”.

{

int input = 0;

try

{

Console.Write("Enter number: ");

input = Convert.ToInt32(Console.In.ReadLine());

}

catch (Exception e)

{

Console.WriteLine(e.Message);

}

Draw\_Isosceles\_Triangle(input);

}

public static void Draw\_Isosceles\_Triangle(int num)

{

// Run all over the triangle

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

{

// Draw some sapces before we start drawing the asterisks sequence

for (int j = num - i; j > 0; j--)

Console.Write("");

// Draw asterisks and one space because we want a isosceles triangle

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

Console.Write(("(c)"));

// Create new line for the next asterisks sequence

Console.WriteLine();

**12.** A company dealing with marketing wants to keep a data record of its **employees**. Each record should have the following characteristic – first name, last name, age, gender (‘m’ or ‘f’) and unique employee number (27560000 to 27569999). **Declare appropriate variables** needed to maintain the information for an employee by using the appropriate data types and attribute names.

{

string firstName = "Filan";

string lastName = "Fisteku";

sbyte age = 20;

char gender = 'm';

int id = 27560000;

Console.WriteLine(firstName + " " + lastName + " is " + age + " is a " + gender + " his id number is " + id);

}

**13.** Declare two variables of type **int**. Assign to them values 5 and 10 respectively. **Exchange (swap) their values** and print them.

{

int n1 = 5;

int n2 = 10;

int oldn1 = n1;

n1 = n2;

n2 = oldn1;

}