Hand-out

Variables & DataTypes

Leerjaar 1 | Periode 1

1. **Introduction**

   Hola, soy Boy del equipo die animation, in cinco monitos empetheramos con tennis. (Talk about the essence of repetition and use the spanish storyline). [Motivational]

2. **What are variables**

   A variable is a reservation in the memory of the computer where you can store data. This data can be of a certain type. A piece of text is a different type than for example a number, and there are many more options.

   You can see a variable as a box with a label on it. You can open this box and you can put something in it, you can close it, name it and put it on the shelf, but also open it again to add something to the content, change it or even throw it away so that the box is empty again.

   The label that is on the box is the name of the variable, which is no longer adjustable after it is made. You can, however, place the contents of the box in another box with a different label on it.

   Here is an example:

```
var strAddress = "Torenallee 75";
var strPostalCode = "5617 BB";
var intAge = 41;
var blnCanDo = True;
```

3. **Naming things**

   Good naming is essential for your program, when you create a variable make sure you include the type in the name first. Usually you see that done in a 3-character abbreviation. A string becomes str, an integer int and a boolean bln. Then make sure that the name of your variable says something about how it works. If you have a variable that has a name stored make sure you call it strName.

   Pay particular attention to the way the capital letters are used, we call this camelCase because it resembles a camel hump. So we always start with a lowercase letter and with the first new word we use a capital letter. For class methods we use the PascalCase notation, in this notation we start with a capital letter.

4. Comments

As a programmer, comments can help you well. By putting comments in your code, you can always give an extra little explanation about what the code does and how to deal with it.

This is also extremely useful if you are in a team and your colleagues have to work in your code one day to write an update or make an adjustment, then it is useful if there is an extra piece of explanation in the code. Comments we code like this:

```
1
2   // This is single line of comment
3
4   /*
5       These are
6       Multiple lines
7       Of comment
8   */
9
10  /**
11   * This could be a header of some sort
12   ***********************************/
13
```

5. Data Types

The data that a variable holds is of a certain type, this type determines what kind of data can be stored in the variable. A number or cipher is of a different type than a piece of text and therefore also has a different type definition

As we learned in the previous handout, the variable type of a piece of text is a string. A number is of type int or integer.

Below you will find a list of the most common data types, it is useful if you go through this list regularly in the coming period so that you know the data types well.

Data types		
Type	Description	Example
Boolean	True or False, 1 or 0	True/False
Byte	Bit value	0x3400
Short	Small number	32
Integer	Number	100
Long	Large number	10000x0
Character	Character	'v'
Float	Number with decimals	1.001F
Double	Number with decimals	23.5
Decimal	Number with decimals	44.1M
Object	Basic type for all other types	New Object();
String	One or more characters	"This is a string"
DateTime	Date and time	New DatTime();

6. **Data Types**

Within our program we can convert data types via the Convert class. The Convert class is part of the System namespace and contains a number of functions, for example, converting a piece of text into a number.

Here is an example :

```
1   string strAge = "36";
2   int intAge = Convert.ToInt16(strAge);
```

7. **Demo**

In this demo we are going to write some code together, it's important that you pay attention to what I do. We are going to create some variables and convert their types. After this demo you are going to do the assignment which is based on the code we write here..

8. **Assignment**

Create a program that asks for a number two times, save both results in different variables and sum them up together.

This is the desired result: