CodeLayout & Basic DataType: Strings

& a bit of setup and config work

Software Engineering 1

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University of Plymouth 2022

COMP1000

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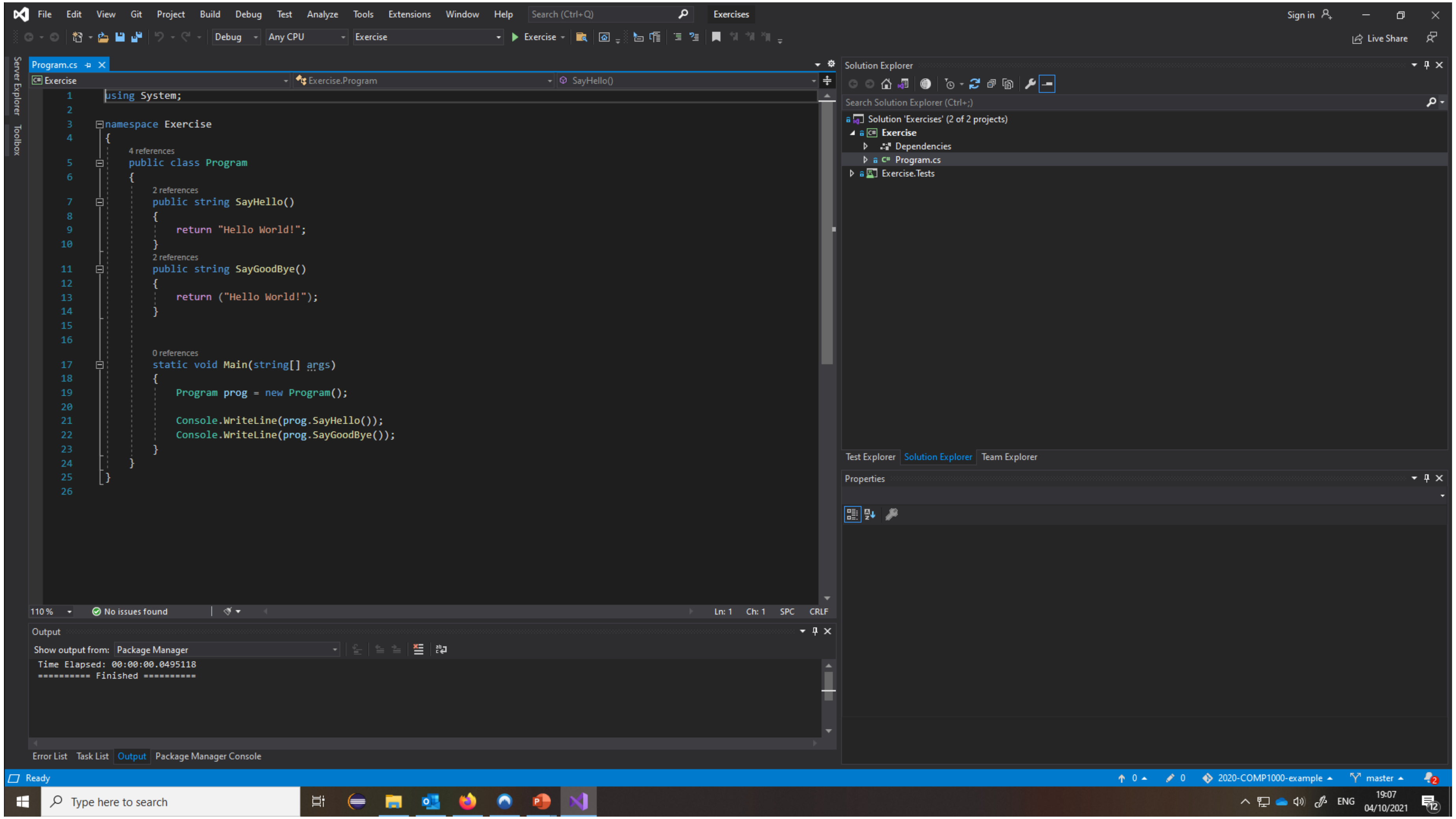
Please Sign in using Code: – –

COMP1000 Agenda This Week:

- CodeLayout
- Strings

How & Where to Write Code

How to start coding C#



```
using System;

namespace Exercise
{
    4 references
    public class Program
    {
        2 references
        public string SayHello()
        {
            return "Hello World!";
        }
        2 references
        public string SayGoodBye()
        {
            return ("Hello World!");
        }


        0 references
        static void Main(string[] args)
        {
            Program prog = new Program();

            Console.WriteLine(prog.SayHello());
            Console.WriteLine(prog.SayGoodBye());
        }
    }
}
```

```
Time Elapsed: 00:00:00.0495118
========== Finished ==========
```

Some Statements

```
bool truthValue;
truthValue = true;

int number;
number = 12;
number = 12.0f;

float number2 = 12;
number2 = 12.1f;

string word = "hello";
word = "12";


number2 = number;
number = (int)number2;
word = "hello" + number;
```

Class Structure (Layout)

```
using System;
namespace Exercise {
    public class Program {
        public string SayHello() {
                return "Hello World!";
        }
        public string SayGoodBye() {
            string message= "GoodBye World! ";
            message.Trim();
            return message;
        }

        static void Main(string[] args) {
            Program prog = new Program();
            Console.WriteLine(prog.SayHello());
            Console.WriteLine(prog.SayGoodBye());
        }
    }
}
```

Main Method (Program Entry Point)

```
public class Program {
        public string SayHello() {}
        public string SayGoodBye() { }


        static void Main(string[] args) {
            Program prog = new Program();
            Console.WriteLine(prog.SayHello());
            Console.WriteLine(prog.SayGoodBye());
        }
```

Method Structure (Layout)

```
public string SayGoodBye() {
    string message= "GoodBye World! ";
    message.Trim();
    return message;
}
```

Visual Studio

preparing for the seminars/ programming:

1. on Github:
   - create an account
   - Accept invitation for COMP1000 exercise1 on the DLE
   - Deadline: 24/10/2022 10am GMT

Git Workflow

- Important things to remember
  - folders are difficult to work with
  - file renaming and deleting/moving problematic
  - use of external libraries in your project (large amounts of needed which does not change)

- Working Routine (each day/change):
  1. Pull (git pull)
  2. work
  3. stage selected files (git status; git add <changes>)
  4. commit changes: (git commit –m “message”)
     1. write meaningful change message
     2. first line give a subject than add empty line before describing things in detail
     3. treat it like a diary
     4. if a milestone was reached: git tag
  5. back to 2
  6. before ending a day push (git push)

Visual Studio

preparing for the seminars/ programming:

1. Install and check dotnet (dotnet –version) should be 5.XXX
2. Check and install git cmd client (git --version) (github desktop is not enough)

3. DON'T SUBMIT without checking that you did not modify the wrong files
   1. Git status is your friend!!!

Visual Studio

Stepping through the example project

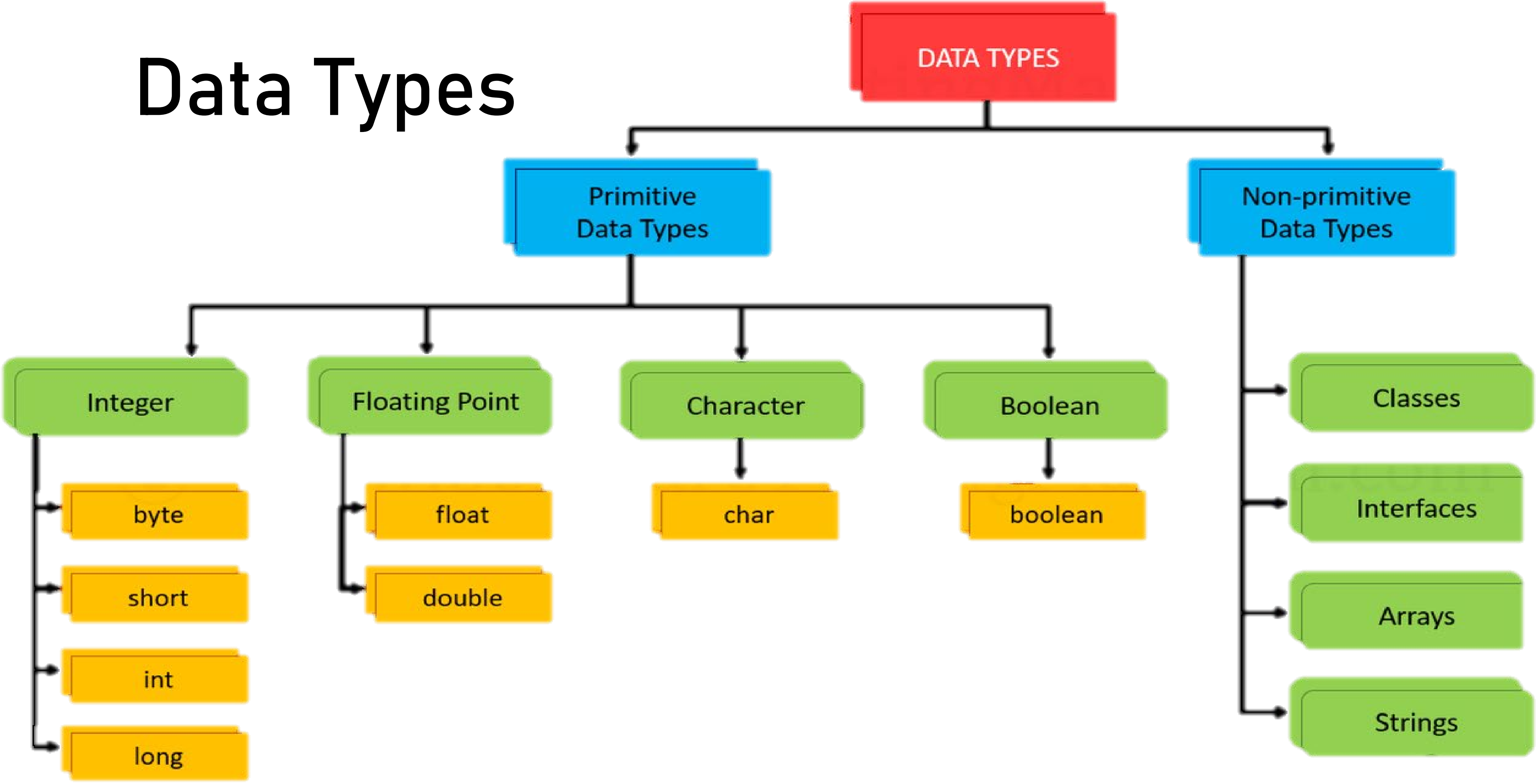
Useful commands:

- dotnet new tool-manifest
- dotnet tool install Cake.Tool –version 0.38.4
- dotnet cake --target=Build
- dotnet cake --target=Tests
- dotnet new console –o <Name>
- dotnet new sln –n <Name>
- dotnet sln add <project>

Useful files/folder:

- Cake.build
- .config
- tools

Data Types



itive-data-types

https://producto-valvo.com/datatypes-in-c-and-net/

C# text handling using String[1,2]

- Non primitive class
- Allows manipulation of characters
- Derived class integrating characters into array
  - String != string   (one is a class the other is a data type)
  - string text = “HELLAS”;
  - text[0] == ‘H’;
- Useful methods:
  - Length
  - Joining strings using Concat or + operator
  - Split (uses character to determine where)
  - Trim (removes white spaces at beginning and end)
  - Compare, Contains, StartsWith, EndsWith (Compares against a test string)
  - SubString(int,int)
  - Interpolation using $” ” or Verbatim using @” ”

C# Loops & Process Flow

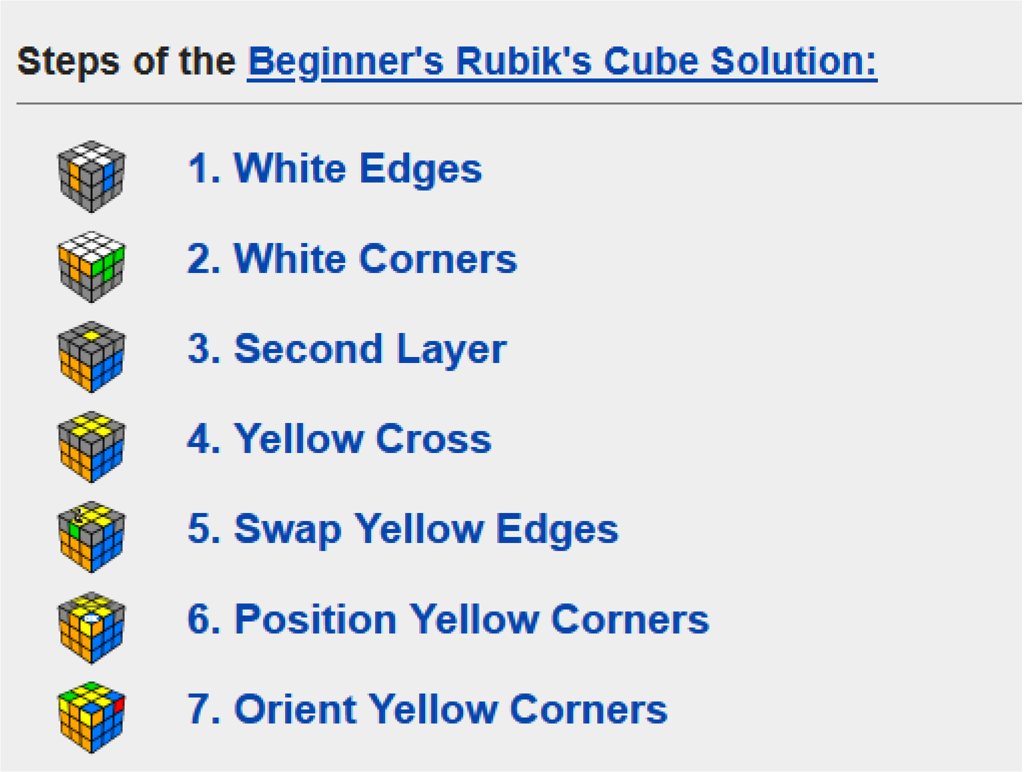
- Next time

For Thursday:

- Look into Exercise1
- Come with questions!
- Work through the exercise during the session to get help.

Computational Thinking: PseudoCode

https://ruwix.com/the-rubiks-cube



Steps of the Beginner's Rubik's Cube Solution:

1. White Edges
2. White Corners
3. Second Layer
4. Yellow Cross
5. Swap Yellow Edges
6. Position Yellow Corners
7. Orient Yellow Corners