PROGRAMMING SKILLS II

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Lecture 05

Foundation Certification in IT – Curtin batch

USER DEFINED DATA VALUES

LECTURE 5

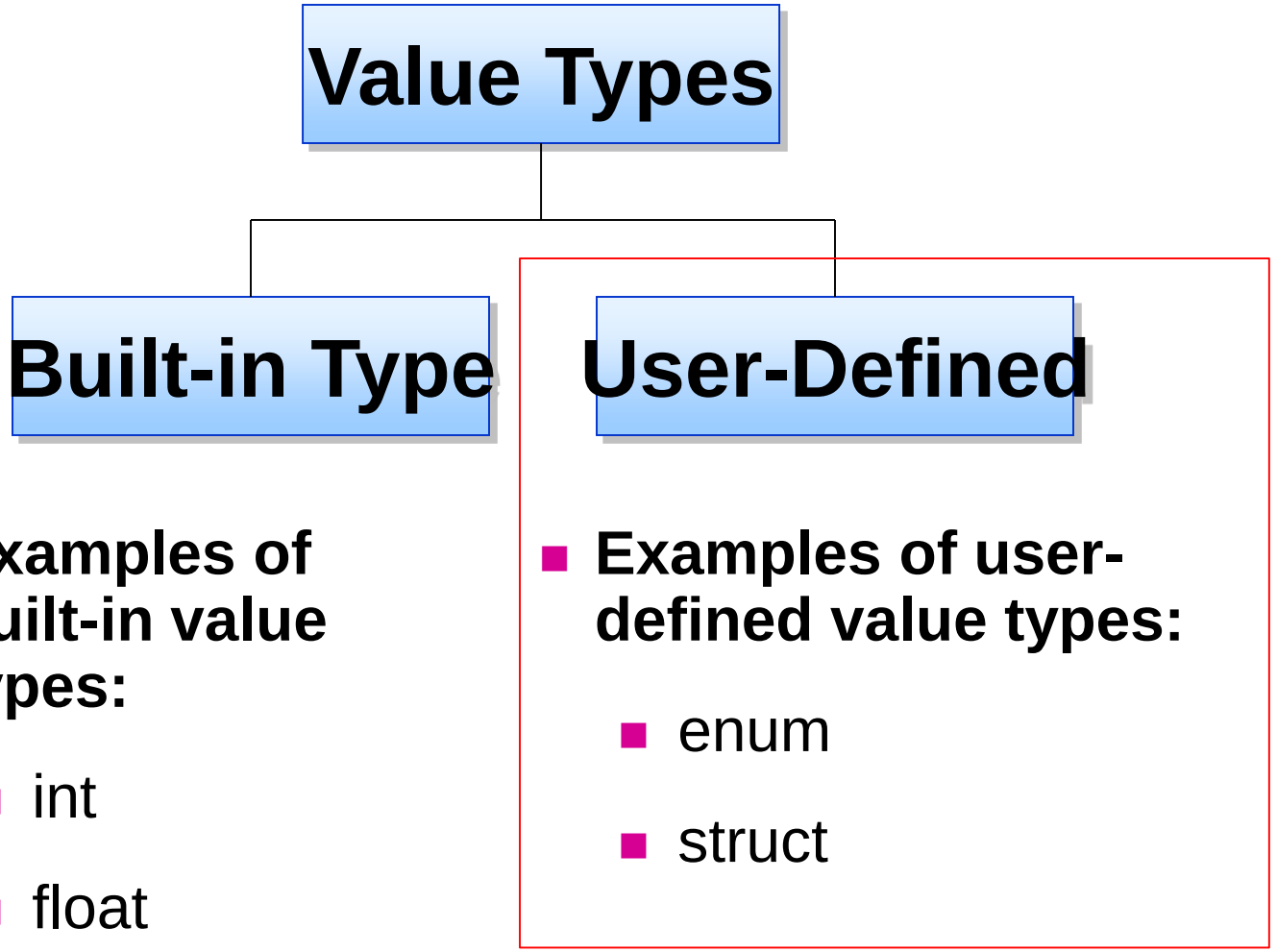
LEARNING OUTCOMES

To identify the user define data values

To use user defined data values

REMEMBER?????

COMPARING BUILT-IN AND USER-DEFINED VALUE TYPES



- **Examples of built-in value types:**
  - int
  - float

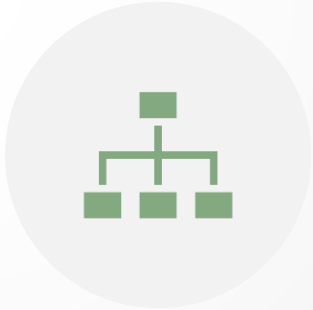
- **Examples of user-defined value types:**
  - enum
  - struct

All value types directly contain data, and they cannot be **null**.

USER-DEFINED DATA TYPES

Enumeration Types

~ Enums



Structure Types

~ Struct

ENUMERATION TYPES

- *Enumeration type used to give a constant names for set of integer/numeric values.*

Example : - You assigned age values to 3 students.

Jack – 20
Peter – 25
Lora - 23

That values used many times in the program. After thousands line of codes you used that values, but you messing up with the names of variables.

If we give specific name/ constant name for the ages, we can use it easily.

ENUMERATION TYPES – FOR THE STRING VALUES

Develop a program to retrieve the colors in Traffic Light System using an enumeration format.

- Defining an Enumeration Type

```
enum Color { Red, Yellow, Green }
```

- Using an Enumeration Type

```
Color colorPalette = Color.Red;
```

- Displaying an Enumeration Variable

```
Console.WriteLine("{0}", colorPalette); // Displays Red
```

ENUMERATION TYPES – FOR THE INT VALUES

Develop a program to retrieve the ages of 3 villagers using an enumeration format.

- Defining an Enumeration Type

```
enum Age {
        Kamal = 40,
        Sunil = 42,
        Piyal = 38
}
```

- Using an Enumeration Type

```
    int ageKamal = (int) Age.Kamal;
    int ageSunil = (int) Age.Sunil;
    int agePiyal = (int) Age.Piyal;
```

- Displaying an Enumeration Variable

```
    Console.WriteLine("Kamal's Age - {0}", ageKamal);
    Console.WriteLine("Sunil's Age - {0}", ageSunil);
    Console.WriteLine("Piyal's Age - {0}", agePiyal);
```

PROGRAMMING EXERCISE

- Create a C# enum to Store the age Level of a person. And print the age levels in console screen using enums.
  - Child
  - Teen
  - Young
  - Old

STRUCTURE TYPES

- *Structure type used to define One Data Structure that holds set of data. Data can be constants, fields, methods, properties, indexers, operators, events, and nested types.*

Example : - You are going to describe a Student by following attributes.

name, age, address

Think you have to add same attributes with different data of 1000 students. So is it possible to create different variables to access each data???

If we create attribute structure and apply that structure to all the students, that's the easy way.

STRUCTURE TYPES

- Defining a Structure Type

```
public struct Employee
{
    public string firstName;
    public int age;
}
```

- Using a Structure Type

```
Employee companyEmployee;

companyEmployee.firstName = "Joe";
companyEmployee.age = 23;
```

PROGRAMMING EXERCISE

- Write a c# program to store the following details in a user defined structure. Then print the birthday in console screen.

```
Name of the student: Peter
Input day of the birth : 04
Input month of the birth : 08
Input year for the birth : 1959
```

THANK YOU

SEE YOU NEXT WEEK