

# Programming 3

UCN – Computer Science - C#

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## How can I initialize an object?

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# 1. Create project

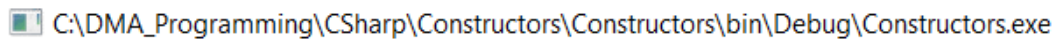
Create a Console App (.NET Framework) C# project.  
It's important that you create the exact project type. Tip 1

## 2. Create empty Person object

Create a Person class like this:

```
public class Person {  
  
    private string name;  
    private DateTime birthdate;  
  
    // A property  
    public string Name {  
        get { return name; }  
    }  
}
```

In the Main method create a Person and print out the name. The output should look like this:



You can use `Console.ReadKey()` ; to temporarily stop the execution.

### *Reflection*

How was the object created?

## 3. Create a Person object with name

Add this constructor in Person:

```
public Person(string name) {  
    this.name = name;  
}
```

Create an extra person using the new constructor.  
Print out both names.

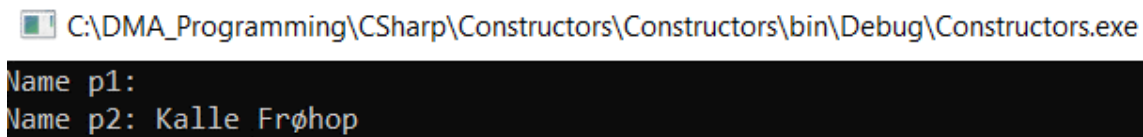
Build the project.

Explain why you get an error?

Repair the code until it builds without errors.

Run – the output should look like this:

---



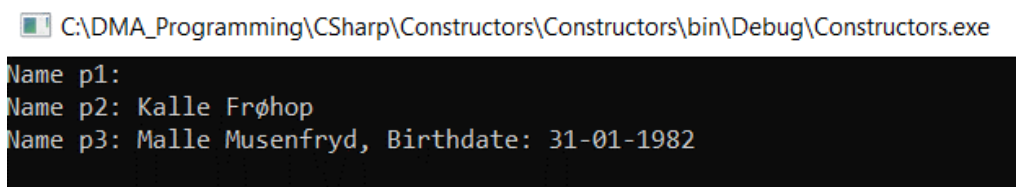
```
C:\DMA_Programming\CSharp\Constructors\Constructors\bin\Debug\Constructors.exe
Name p1:
Name p2: Kalle Frøhop
```

## 4. Create a Person object with name and birthdate

Add a third constructor with parameters name and birthdate.

Create an third person using the new constructor.

Print out this person incl. birthdate – the output should look like this:



```
C:\DMA_Programming\CSharp\Constructors\Constructors\bin\Debug\Constructors.exe
Name p1:
Name p2: Kalle Frøhop
Name p3: Malle Musenfryd, Birthdate: 31-01-1982
```

## 5. Create a Person object with name and birthdate re-using constructor

Use this() to re-use constructor `public Person(string name).`

Tip 2.

Run the program to check that everything works as before.

## 6. Create Person objects using object Initializers

Un-comment (mark area and press ctrl+k+c) all the nice construcors.

But create the exact same objects using object initializers instead.

Tip 3.

Run the program to check that everything works as before.

## Reflection

When to use constructors and when to use object initializers?

# 7. Override the ToString method

Override the ToString method in Person class – and use it to print the object data.

## Extra

Create a subclass to Person called Employee.

Add one or more attributes and create a full constructor using all the attributes from Person (base) and Employee.

Override the ToString method in Employee class – and use it to print the object data.

Instantiation may look like this:

```
Employee e1 = new Employee("P E Dahl", new DateTime(1979, 2, 28), 25000);
```

And output like this:

```
Person
Name:
Birthdate:
Person
Name: Kalle Frøhop
Birthdate:
Person
Name: Malle Musenfryd
Birthdate: 31-01-1982 00:00:00
Person
Name: P E Dahl
Birthdate: 28-02-1979 00:00:00
Salary: 25000
```

# Help

## *Tip 1*

Select New and Project...

Then search using search term: console

Choose the correct console project template.

## *Tip 2*

Get inspired by this template:

```
public AnyClass(string xString, DateTime yDate) : this(xString) {  
    this.yDate= yDate;  
}
```

## *Tip 3*

First you have to add `set` to your properties, e.g. like in this property:

```
public string Name {  
    get { return name; }  
    set { name = value; }  
}
```

Now you can use object initializers when you instantiate the objects in the Main method.