

# C# and Microsoft .NET

# Classes and Objects



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# Last time...

- Classes and Objects?
  - More examples?
- Tic Tac Toe example in Git Hub 😊
  - <https://github.com/smg-bg/tic-tac-toe>
  - Git... what the f\*\*\*?
- Feedback form and homework solutions / feedbacks ... late again. Please complain 😞 😞 😞
- Homework?
  - Was it difficult?
  - Let's do it together for some extra practice 😊

# Principles of OOP

- Abstraction

*Hide all but relevant details from end users / programmers*

- Encapsulation

*Hide the internal details from end users / programmers*

- Inheritance

*Reuse (share) logic and state from parent classes*

- *Polymorphism\**

# Inheritance

- The hierarchical structure of classes
- What exactly is inheritance
  - Derived classes inherit base classes
  - Classes implementing interfaces
  - Derived interfaces implementing base interfaces
- Uses of inheritance
- What about structs?

# Inheritance

```
access_modifier class class_name : parent_class  
{  
  
}
```

# Class Diagrams

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# The base class

- Accessing methods of the base
- Access\_modifiers with inheritance
  - Protected
  - Internal protected
  - Private protected

# Abstract classes

- Abstract classes
  - `access_modifier abstract class class_name { ... }`
- Why placing abstractions
- Abstract classes and class hierarchies



# Interfaces

- Interfaces vs. Abstract classes
- The concept of interfaces
- When do we use interfaces?
- Inheritance vs. Implementation
- Interfaces as contracts for client code
- Interfaces and design patterns

Questions?

