OOP or FP?

To be an OOP Language

- You need to have `classes`
- Encapsulation, Inheritance, Polymorphism

To be a FP Language

- You need to have `function` pointers
- Function types

Why choose?

- Most languages support `both`

FP in Java

Pointing to a method

person.java

```java
public class Person {
  private String name;

  public Person(String name) {
    this.name = name;
  }

  public void greet(String timeOfDay) {
    System.out.println("Good " + timeOfDay + ", " + this.name);
  }
}
```

program.java

```java
public class Program {
  public static void main(String[] args) {
    Person person1 = new Person("Alice");
    Person person2 = new Person("Bob");

    Consumer<String> greeter1 = person1::greet;
    Consumer<String> greeter2 = person2::greet;

    greeter1.accept("morning"); // Output: Good morning, Alice
    greeter2.accept("evening"); // Output: Good evening, Bob
  }
}
```

FP in C#

Pointing to a method

C# person.cs

```
public class Person
{
    private string name;

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

    public void Greet(string timeOfDay)
    {
        Console.WriteLine($"Good {timeOfDay}, {this.name}");
    }
}
```

C# program.cs

```
public class Program
{
    public static void Main(string[] args)
    {
        Person person1 = new Person("Alice");
        Person person2 = new Person("Bob");

        Action<string> greeter1 = person1.Greet;
        Action<string> greeter2 = person2.Greet;

        greeter1("morning"); // Output: Good morning, Alice
        greeter2("evening"); // Output: Good evening, Bob
    }
}
```

Function Pointers in OOP Languages