

Assignment 1

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Assumptions Made

The assignment states the derived classes methods should just print what they plan to do when completed later. The "class search functionality" was assumed to be searching based on a couple relevant properties like name, teacher, and id. The course object is assumed to be something that's stored in a relational database with a class object to act as a DTO. It's unclear whether this class should be made as a write or read model (or both.) Because of this the course class was

Description and Proof of Work

To build a user interface three derived classes extend a base user class. The base user class sets a first and last name as well as an id. The base class is the most concrete and tested. Here's a test case (shown in java) run through all three languages for the base class.

Test Case

```
IUser user1 = new IUser("User1", "lastName", 1);
System.out.println(user1.toString());
user1.setFirstName("firstName");
System.out.println(user1.toString());
```

Java Output

```
IUser [firstName=User1, lastName=lastName, id=1]
IUser [firstName=firstName, lastName=lastName, id=1]
```

C++ Output

```
User: User1 lastName 1
User: firstName lastName 1
```

Python Output

```
firstName=User1 lastName=lastName id=1 firstName=firstName lastName=lastName id=1
```

The base class is then extended by the student, admin, and instructor class. These classes call the base constructor, add no new properties, and only add methods which print what they plan to do when written.

Advantages / Disadvantages

Language	Advantages	Disadvantages
Java	Strict typing while offering dynamic arrays	Strict typing takes a little longer to write
Python	Weak typing with tons of flebility	Bad at catching type errors prior to runtime
C++	Strict typing for better error checking	Headaches whenever you need to use dynamic arrays especially of custom objects