



Day 12: Inheritance ☆

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Problem

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Objective

Today, we're delving into Inheritance. Check out the attached tutorial for learning materials and an instructional video!

Task

You are given two classes, *Person* and *Student*, where *Person* is the base class and *Student* is the derived class. Completed code for *Person* and a declaration for *Student* are provided for you in the editor. Observe that *Student* inherits all the properties of *Person*.

Complete the *Student* class by writing the following:

- A *Student* class constructor, which has 4 parameters:
 - A string, *firstName*.
 - A string, *lastName*.
 - An integer, *id*.
 - An integer array (or vector) of test scores, *scores*.
- A *char calculate()* method that calculates a *Student* object's average and returns the grade character representative of their calculated average:

Grading Scale

Letter	Average (<i>a</i>)
O	$90 \leq a \leq 100$
E	$80 \leq a < 90$
A	$70 \leq a < 80$
P	$55 \leq a < 70$
D	$40 \leq a < 55$
T	$a < 40$

Input Format

The locked stub code in your editor calls your *Student* class constructor and passes it the necessary arguments. It also calls the *calculate* method (which takes no arguments).

You are not responsible for reading the following input from stdin:

The first line contains *firstName*, *lastName*, and *id*, respectively. The second line contains the number of test scores. The third line of space-separated integers describes *scores*.

Constraints

- $1 \leq |\text{firstName}|, |\text{lastName}| \leq 10$
- $|\text{id}| \equiv 7$

- $0 \leq \text{score, average} \leq 100$

Output Format

This is handled by the locked stub code in your editor. Your output will be correct if your *Student* class constructor and *calculate()* method are properly implemented.

Sample Input

```
Heraldo Memelli 8135627
2
100 80
```

Sample Output

```
Name: Memelli, Heraldo
ID: 8135627
Grade: O
```

Explanation

This student had **2** scores to average: **100** and **80**. The student's average grade is $\frac{(100+80)}{2} = 90$. An average grade of **90** corresponds to the letter grade **O**, so our *calculate()* method should return the character 'O'.

Easy

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Max Score **30**

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Resources

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Current Buffer (saved locally, editable)

Java 8



```
1 ▶ import java.util.*;
2
3 ▼ class Person {
4     protected String firstName;
5     protected String lastName;
```