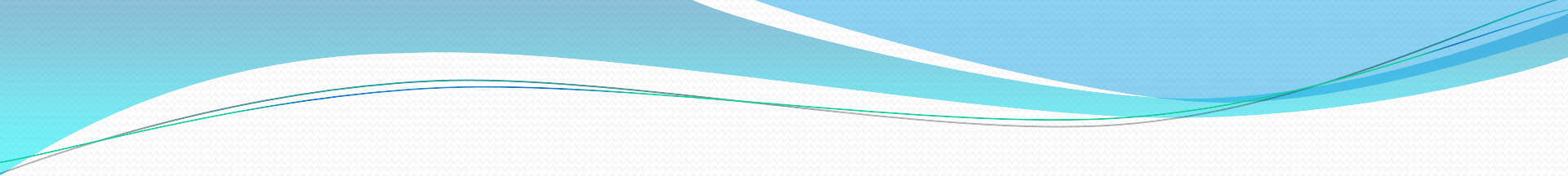


Lab 3

Problem 1. In your Lab 3 folder there is a package `lesson3.labs.prob1` containing two classes, `Person` and `PersonWithJob`. In each class, the `equals` method has been overridden. Run the main method in the `PersonWithJob` class. In the main method, two instances of `Person` have been compared to determine if they are equal. The comparison is done in two different ways. One way leads to a “false”, the other to a “true.” Explain why this has happened. Then provide a solution by replacing inheritance with composition.



Problem 2. Design a solution to the problem given in the next slide, and then implement in code. Hard code a few buildings, apartments and their rental fees in the main method of a separate Main class, to test your code. In your main method, calculate the income for your hardcoded values

Problem 2: Problem Statement

A landlord owns multiple buildings, each building has multiple apartments. Each apartment has a rent associated with it. Each building generates profit which is the sum of all the apartment rents minus the building maintenance costs. Write a program that will calculate the landlord's monthly total profits.

Problem 3. UML classes Circle and Cylinder are given below, pictured in an inheritance relationship.

- A. Write the code for Circle and Cylinder in Java, making use of the inheritance relationship.
- B. Redo the design using composition, and write the resulting code in Java.

