Application Programming

Week 2

Lecture 2

Announcements - Quiz 1 and Lab 1

- Quiz 1 and Lab 1 are posted on BB.

- All labs, quizzes, and exams must be **completed on your own**.

- You may ask the UTSA CS tutors, TAs, graders, or course instructors for assistance with specific concerns, but you **cannot collaborate** with anyone else.

  - This includes those enrolled in the course as well as anyone not enrolled, online "homework help" websites, etc.

  - Our tutors, TAs, graders, and instructors will help you work through problems. We will not code for you
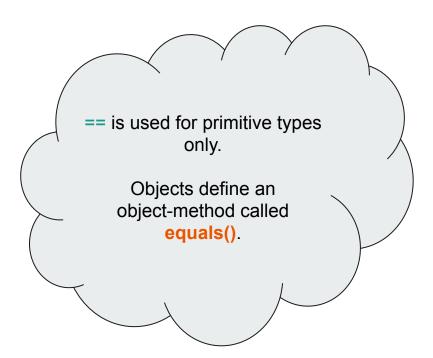
Announcements - Team Project

- Important dates
  - 09/02: Team Formation (sign-up sheet link on BB)
    - *Please check the columns headers :)*
  - 09/23: Project Proposal
    - More details coming soon
  - 11/26: Project Demo Video
  - 12/01: Project Code and Team Survey

Deliverables

- Comparisons in Java

- Java Arrays

Comparisons in Java

- ==
  - 2 == 2
- .equals()
  - "Hi".equals("Hello");

== is used for primitive types only.

Objects define an object-method called **equals()**.

Java Arrays

- Arrays can be declared
  - by size
    - `int[] myNumbers = new int[];`
  - by values directly
    - `int[] myNumbers = {10, 20, 30, 40};`

Java Arrays

- Access values in an array by providing an index

  - ```
    int[] myNumbers = {10, 20, 30, 40};

    int x = myNumbers[1];
    ```

- Overwrite values at an index by using assignment

  - ```
    x = x + 5;

    myNumbers[1] = x;
    ```

Java Arrays

- Loop over array elements to fill array, modify elements, ... etc.

    ```
    for int i = 0; i < myNumbers.length; i++){

        myNumbers[i] = i * 10;

        System.out.println(myNumbers[i]);

    }
    ```

Java Arrays

- In the case where a class variable contains a *data structure*, multiple setter methods should be created
  - Setter to set the value of the entire data structure
  - Adder to add just one value to the data structure

```java
public class HelloWorld{
    private String[] messages;
    public void setMessages(String[] texts){
        this.messages = texts;
    }
    public void addMessage (String text){
        // code to add the value of text to the array
    }
}
```