

CS112

Review of CS111

Lecture 01

الفصل الدراسي الثاني 1442 - Spring 2021

College of Computer Science and Engineering



Java Characteristics

- Java is a high-level language
 - It is simple and easy to read and understand
- We use compilers to compile Java codes
 - A compiler takes the program code (source code, e.g., .java file) and converts the source code to a **machine language** module (called an object file, e.g., .class)
- It is platform compatible
 - it works on different operating systems such as Windows, mac, and several Linux distributions
- Java is OO
 - It deals with classes and objects of these classes (we will dig deep on this topic throughout this course!)
- It is perfect for web applications
 - It is supported with network facilities



especially, Java!

Exercise 01 - Primitive Data Types

- Give me examples for numeric data types
- Which data type should we use for the following values:
 - 5.4
 - “Welcome to CS112”
 - 0 and 1
 - ‘A’
 - 1,2,3,4,5
 - Name □ “Amal”, GPA □ 4.5, SID □ 378265 ??? Hmm!

IDE

- Eclipse ☐ You can find a tutorial (file name: setup_eclipse.ppt) on how to setup the working environment
- Online IDE: https://www.tutorialspoint.com/compile_java_online.php

Scanner Class

- Scanner class is used when we need to obtain input from user

```
import java.util.Scanner;

public class Ex1 {
    public static void main(String[] args) {
        Scanner input = new Scanner (System.in);
        System.out.println("What is your name?");
        String name = input.next();
        System.out.println("Your name is " + name);
    }
}
```

If Statement

- We use if statements when we need to evaluate conditions in our program
- There are three types:
 1. One-way if statement
 2. Nested if statements
 3. If-else statements

```
import java.util.Scanner;

public class Ex1 {

    public static void main(String[] args) {
        Scanner input = new Scanner (System.in);
        System.out.println("What is your age?");
        int age = input.nextInt();

        if(age >= 18) {
            System.out.println("You are an adult.");
        } else { // else if(age < 18) // if (age < 18)
            System.out.println("You are a teenager.");
        }

    }
}
```

Loops

- We use loops to execute statement(s) repeatedly for a number of rounds
- Loops can be infinite
- There are three types of loops:
 - For
 - While
 - Do...While

Can you give me an example for each loop type?

Methods

- A **method** is a block of code which only runs when it is called
- You can pass data, known as parameters, into a **method**
- **Methods are used** to perform certain actions, and they are also known as functions

Arrays

- Arrays are used to store several values of the same data type
- Syntax:
 - `datatype[] arrayName = new datatype[];`
 - There are other ways to declare arrays .. Example?
- Arrays can have two dimensions
 - Syntax:
 - `datatype[][] arrayName = new datatype[rows][columns];`
 - Example?