How to Run a Java Program

CSE 1310 – Introduction to Computers and Programming Vassilis Athitsos University of Texas at Arlington

Initial Steps

- You must install Java SDK.
- You must install Netbeans.
- These are steps that you do just once. Once Java and Netbeans are installed, you can run any Java program you like on your computer.

Installing Java SDK, Version 8, Update 66

- As of January 19, 2016, the current version of Java SDK is Version 8, Update 66 (Java SE Development Kit 8u66).
- To install the current version of Java SDK:
 - Go to:

http://www.oracle.com/technetwork/java/javase/downloads/index.html

- Click on "JDK Download"
- Follow the instructions on screen to complete the installation process.
- If you have trouble installing, ask a TA for help during lab hours.

Installing Netbeans IDE 8.1

- As of January 19, 2016, the current version of Netbeans is 8.1
- To install the current version of Netbeans:
 - Go to https://netbeans.org/downloads/index.html
 - Download the "Java SE" version
 - Follow the instructions on screen to complete the installation process.
 - You will be asked about JUnit: choose to install it.
- If you have trouble installing, ask a TA for help during lab hours.

Creating a Netbeans Project (1)

- Start Netbeans.
- Go to File->New Project

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Print to HTML																
Exit																

Creating a Netbeans Project (2)

- Under Categories, select "Java".
- Under Projects, select "Java Application".
- Click "Next". New Project



Creating a Netbeans Project (3)

- Give a name to your project, e.g., hello1.
- Give to your main class <u>the same name as for your project</u>, and click "Finish".
- Names matter,
 see next slides.

 Students

 Iose lots of points each semester for ignoring the instructions in the next 3 slides.

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		Different users and projects can share the same compilation libraries (see Help for details).					
	📝 <u>C</u> reate Main C	ilass hello 1					

Choosing a Name for the Main Class

- Netbeans suggests a default name for the main class.
- For example, if the project name is hello1, Netbeans suggest name hello1.Hello1 for the main class.

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Choosing a Name for the Main Class

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Writing Code (1)

• If you create a new project as described, Netbeans will create a Java file, that looks like this:

```
/*
 * To change this license header, choose License Headers in Project Properties.
 * To change this template file, choose Tools | Templates
 * and open the template in the editor.
 */
/**
 *
 * @author athitsos
 */
public class hello1 {
  /**
   * @param args the command line arguments
   */
 public static void main(String[] args) {
    // TODO code application logic here
  }
```

Writing Code (2)

The place where you put your code is indicated with the text
 // TODO code application logic here

```
/*
 * To change this license header, choose License Headers in Project Properties.
 * To change this template file, choose Tools | Templates
 * and open the template in the editor.
 */
/**
 *
 * @author athitsos
 */
public class hello1 {
  /**
   * @param args the command line arguments
   */
 public static void main(String[] args) {
    // TODO code application logic here
  }
```

Writing Code (3)

• For the first assignments, all you have to do is replace that "TODO" line with your own lines of code.

```
/*
 * To change this license header, choose License Headers in Project Properties.
 * To change this template file, choose Tools | Templates
 * and open the template in the editor.
 */
/**
 *
 * @author athitsos
 */
public class hello1 {
  /**
   * @param args the command line arguments
   */
 public static void main(String[] args) {
    // TODO code application logic here
  }
```

}

Writing Code (4)

- Text that starts with /* and ends with */ is NOT PART OF THE PROGRAM.
- This text is called "comments", and is meant to be read by humans, not the computer.
- We will usually not care about (and not show) the comments that Netbeans generates. You can delete them if you want.

```
/*
 * To change this license header, choose License Headers in Project Properties.
 * To change this template file, choose Tools | Templates
 * and open the template in the editor.
 */
/**
 *
 * @author athitsos
 */
public class hello1 {
  /**
   * @param args the command line arguments
   */
 public static void main(String[] args) {
    // TODO code application logic here
  }
}
```

Writing Code (5)

• Without the comments, the initial code that Netbeans generates looks more simple:

```
public class hello1 {
   public static void main(String[] args) {
      // TODO code application logic here
   }
}
```

A First Example

• Remember: for a good part of the class, your code will go where the TODO placeholder is.

```
public class hello1 {
   public static void main(String[] args) {
      // TODO code application logic here
   }
}
```

A First Example

• Here we have replaced the TODO placeholder with a line of code.

```
public class hello1 {
   public static void main(String[] args) {
     System.out.println("Hello world");
   }
}
```

• To run this code, go to Run->Run Project (or press F6) to compile the code.

• When you run your code, an "Output Window" appears at the bottom, that looks as shown.



Failure to Run

- A lot of times you will get errors, and you will not be able to run the program.
- Do not panic, this is a very common thing to happen.
- For example, on this code we introduce an error on purpose, to see what happens (we delete the semicolon after "Hello world").

```
public class hello1 {
   public static void main(String[] args) {
     System.out.println("Hello world")
   }
}
```

 Now, when we try to run this code, we get what is shown on the next slide:

Error Message

🗊 Run P	roject	×
<u> </u>	One or more projects were compiled with errors Application you are running may end unexpectedly.	5.
	Always run without asking	
	Run Anyway Cancel	

- You will be seeing this window a lot.
- When you see it, click "Cancel".
- Then, click on "Run->Clean and Build Project".
- Now, the output window will show you an error message, which you should try to fix.
- You will learn how to fix these errors during the course.
- After you fix the error, you can try running the code again. If you get more errors, keep fixing them till the code runs.

Netbean Real-Time Error Detection

- Note the ! sign on line 3 of the code.
- This is Netbean's way of telling you that that line is not correct.



Netbean Real-Time Error Detection

- If you put the mouse arrow over the ! sign on line 3, you see an error message.
- In this particular case, it says: ';' expected.
- This means that you forgot to put the semicolon at the end.



Netbean Real-Time Error Detection

• You should look for these ! signs, and fix the errors, before you try to run your code.

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E hello 1		

Running Existing Code

- Oftentimes you may want to run code from somewhere (the slides, the textbook, the course website, etc.).
- To do that, you need to make sure that your project and main class are named appropriately.
- Step 1: Look at the code that you want to run, and find the name that shows up right after "public class".
- Step 2: When you create your project on NetBeans, use that name for your project and your main class.
- Step 3: Copy the code that you want to run to the .java file that NetBeans created.

- Step 1: Look at the code that you want to run, and <u>find the name</u> that shows up right after "public class".
- For example, in this piece of code, what is the name that shows up right after "public class"?

```
public class HelloWorld {
   public static void main(String[] args) {
     System.out.println("Hello world");
   }
```

- Step 1: Look at the code that you want to run, and <u>find the name</u> that shows up right after "public class".
- For example, in this piece of code, the name that shows up right after "public class" is **HelloWorld**.

```
public class HelloWorld {
   public static void main(String[] args) {
     System.out.println("Hello world");
   }
```

• Step 2: When you create your project on NetBeans, use that name (e.g., **HelloWorld**) for your project and your main class.

New Java Application		
Steps	Name and Locati	on
 Choose Project Name and Location 	Project <u>N</u> ame:	HelloWorld
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	Project Fol <u>d</u> er:	C: \Users \athitsos \home \code \HelloWorld
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	🔽 <u>C</u> reate Main Cla	ass HelloWorld
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• Step 3: Copy the code that you want to run to the .java file that NetBeans created.

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Running Existing Code

 Now you can run the code by pressing F6 (or by selecting Run->Run Project from the top menu), and see the output.

