

Week 1B

Java I Review

Javadoc

Today's class

- Review of PROG10082
- JavaDoc
- Review assignment

Review of PROG10082

- Chapter 1: Computers, Programs, and Java
- Chapter 2: Elementary Programming
- Chapter 3: Selections
- Chapter 4: Loops
- Chapter 5: Methods
- Chapter 6: Arrays

Chapter 1: Review

- Computer theory and languages
- Display console messages and a banner pattern
- Print a table
- Compute simple mathematical expressions

Chapter 1: Review

- Write a program that displays area and perimeter of a circle with various radii
 - Print the radius, area, and perimeter as a row in a table

Radius	Area	Perimeter
-----	-----	-----
1.0	3.14	6.28
2.0	12.57	12.57
3.0	28.27	18.85
4.0	50.27	25.13
5.0	78.54	31.42

Chapter 2: Review

- Primitive data types
- Reading input from console with Scanner and JOptionPane
- Variables, constants
- Augmented assignment, increment/decrement
- Complex math

Chapter 2: Review

- Write a program that calculates tips
 - Accept the total of the bill as input
 - Print a table of suggested tips
 - Ask the user if they'd like to continue

Try it with
JOptionPane!

What was the amount of the cheque? 42.99

Service	Tip %	Tip Amount	Total
-----	-----	-----	-----
Poor	5%	2.15	45.14
Average	10%	4.30	47.29
Good	15%	6.45	49.44
Great	18%	7.74	50.73
Excellent	20%	8.60	51.59

Would you like to calculate another (y/n)?

Chapter 3: Review

- Boolean
- If/else, conditional expressions
- Logical operators
- Switch/case
- Format console output with printf()
- Confirmation dialog
- Debugging

Chapter 3: Review

- Write a program to calculate BMI
 - [http://www.wikihow.com/Calculate-Your-Body-Mass-Index-\(BMI\)](http://www.wikihow.com/Calculate-Your-Body-Mass-Index-(BMI))

Enter weight in pounds:	200
Enter height in feet:	5
Enter height in inches:	11
BMI is:	27.9
Range is:	Overweight

Chapter 4: Review

- Loops: for, while, do/while
- I/O Redirection
- Break and continue

Chapter 4: Review

- Write a program that prompts the user to enter the number of students and each student's name and grade (as a number)
- When complete, the program displays the student with the best grade and the second-best

```
...  
Are you done (y/n)? y  
  
Best grade is: Jane Doe (89.5)  
Second best is: John Smith (88.7)
```

Chapter 5: Review

- Define and call a method
- Overloading
- Pass by value, by reference
- Variable scope

Chapter 5: Review

- Write a method that computes the sum of the digits in an integer. Use:
 - public class Calculator
 - public static int sumDigits(long n)

Calculate which number? 25967

The sum of digits in 25967 is 29


$$2 + 5 + 9 + 6 + 7 = 29$$

Chapter 6: Review

- Array basics
 - Copying arrays
 - Passing arrays to methods
 - Returning arrays from methods
 - Sorting

Chapter 6: Review

- Write a program that reads student grades, gets the best grade, and assigns a letter grade based on the Sheridan scheme

```
Enter the number of students: 4
Enter 4 scores: 40 55 70 68
```

```
Results
```

```
-----
```

```
Student 1 score: 40, grade F
Student 2 score: 55, grade D
Student 3 score: 70, grade B
Student 4 score: 68, grade C+
```

Use arrays
Try to build a Student
class

JavaDoc

What is JavaDoc?

- “Super comments”
- Used to produce documentation
- Helps generate API external program documents
- Use to describe:
 - What your class does
 - What your method does (never inside a method!)
 - What a field is for

JavaDoc Sample

```
/**
```

```
This class parses an English sentence, and extracts the  
noun and verb phrases.
```

```
    @author    Mats Swan
```

```
*/
```

```
/**
```

```
This method performs sentence conjugation.
```

```
    @param sInput1: a sentence
```

```
    @param sInput2: another sentence
```

```
    @param conj: a conjunction
```

```
    @throws InvalidEnglishSyntaxException if invalid input
```

```
    @return sOutput: a sentence
```

```
    @version V1.0
```

```
*/
```

Generating

- Developers are lazy!
 - Run javadoc.exe
 - Run the NetBeans tool (or IDE tool)
 - Lots of programs available