CSC 116 – Discussion 2

GINA BAI

Topics

- ✓ Primitive Data Types
- ✓ Expressions
- ✓ Variables
- ✓ Program Errors
- ✓ Debugging
- ✓ Scanner
- ✓ Formatting text with printf

Recap

- ✓ Primitive Data Types
  - ✓ int → -1, 0, 1
  - ✓ double → 0.11
  - ✓ char → ‘A’, ‘1’, ‘\n’
  - ✓ Boolean → true, false

Primitive Data Types

Q: What primitive data type would you use to store…

1. whether a restaurant is open?
2. a person's middle initial?
3. number of people in class?
4. cost of lunch?
5. distance to campus?
6. number of siblings a person has?
7. whether you pass a course?
8. your grade in a class?

Recap

- ✓ Expressions
  - ✓ Operator
    - ✓ +, – , *, /, %
  - ✓ Operand
    - ✓ Values
  - ✓ Precedence
    - ✓ () → positive/negative → *, /, % → +, –
  - ✓ Promotion – widening
  - ✓ Casting – narrowing

Promotion & Casting

Q: Find the resulting value of

783 % 10 / 2 * 2.0 / 5 + (1.75 + 1.0 / 4)

= 783 % 10 / 2 * 2.0 / 5 + (1.75 + 0.25)

= 783 % 10 / 2 * 2.0 / 5 + 2.0

= 3 / 2 * 2.0 / 5 + 2.0

= 1 * 2.0 / 5 + 2.0

= 2.0 / 5 + 2.0

= 0.4 + 2.0

= 2.4

Recap

- ✓ Variables
  - ✓ Declare:

    <type> <name>;
  - ✓ Initialize

    <name> = expression;
  - ✓ Use

Variables

➤JAVA

```java
int a = 2;
int b = 3;
int c = 4;
int d = a + b + c;   // d = 2 + 3 + 4 = 9

a = d - a - b;       // a = 9 – 2 – 3 = 4
b = d - b - c;       // b = 9 – 3 – 4 = 2
c = d - a - c;       // c = 9 – 4 – 4 = 1

System.out.println("a: " + a);
System.out.println("b: " + b);
System.out.println("c: " + c);
System.out.println("d: " + d);
```

Recap

- ✓ Program Errors
  - ✓ Syntax errors
  - ✓ Runtime errors
  - ✓ Logic errors
- ✓ Debugging
  - ✓ Address the first error first
  - ✓ Recompile after each change

Program Errors & Debugging

Q: Name the five syntax errors in FavoriteNumber.java

JAVA

```
1  public class FavNumber {
2
3      public static void main(String[] args) {
4          Scanner console = new Scanner(System.in);
5
6          System.out.Print("What is your favorite number? ");
7
8          fav = console.nextInt();
9
10         System.out.println("Your favorite number is " + fav + ".")
11     }
12 }
```

Recap

- ✓ Scanner
  - ✓ System.in

    import <package name>.*;

    Scanner <name> = new Scanner(System.in);

    - ✓ Always prompt the user for input
- ✓ Formatting text with printf
  - ✓ System.out.printf("format string", parameters);

Lab 2 – Eggs.java

Meadowdale Dairy Farm sells organic brown eggs to local customers. They charge **$3.25 for a dozen** eggs, or **45 cents for individual eggs** that are not part of a dozen.

Write a class that

1. prompts the user for the number of eggs in the order, and then
2. display the amount owed with a full explanation. Output should be in the following format, "You ordered 27 eggs. That is 2 dozen at $3.25 per dozen and 3 loose eggs at 45 cents each for a total of $7.85."
3. is well documented (see style guidelines)

Logistics

- ✓ Lab 2 → on Moodle, due 5/21/2021, 11:45 PM
- ✓ pre-lab 3, 4, and 5 on zyBook will be posted soon
- ✓ Video lectures for Lecture 3, 4, and 5, will be posted 2 days before the class meeting time.