Switch Statements
&
Using Multiple Classes

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Hello everyone

- Please go to Nick’s github page and download Lesson_20181016.zip
- Extract the folder on your computer
- Go to Eclipse and import the folder.
  - file > Import…
  - Expand the folder called ‘General’
  - Import existing projects into workspace
  - Next
  - Next to ‘select root directory’, click browse
  - Find the folder
  - Finish

Switch Statements!

- A good alternative to using ‘if-else’ statements, if you have a lot of cases.
- Example: Printing out the month names that correspond to month numbers

```java
public static void printMonthUsingIfs(int num) {
    if (num == 1) {
        System.out.println("January");
    }
    else if (num == 2) {
        System.out.println("February");
    }
    else if (num == 3) {
        System.out.println("March");
    }
    else if (num == 4) {
        System.out.println("April");
    }
    else if (num == 5) {
        System.out.println("May");
    }
    else if (num == 6) {
        System.out.println("June");
    }
    else if (num == 7) {
        System.out.println("July");
    }
    else if (num == 8) {
        System.out.println("August");
    }
    else if (num == 9) {
        System.out.println("September");
    }
    else if (num == 10) {
        System.out.println("October");
    }
    else if (num == 11) {
        System.out.println("November");
    }
    else if (num == 12) {
        System.out.println("December");
    }
     else {
         System.out.println("???");
     }
}
```

```java
public static void printMonthUsingSwitch(int num) {
    switch (num) {
    case 1:
            System.out.println("January");
            break;
    case 2:
            System.out.println("February");
            break;
    case 3:
            System.out.println("March");
            break;
    case 4:
            System.out.println("April");
            break;
    case 5:
            System.out.println("May");
            break;
    case 6:
            System.out.println("June");
            break;
    case 7:
            System.out.println("July");
            break;
    case 8:
            System.out.println("August");
            break;
    case 9:
            System.out.println("September");
            break;
    case 10:
            System.out.println("October");
            break;
    case 11:
            System.out.println("November");
            break;
     case 12:
             System.out.println("December");
             break;
     default:
            System.out.println("???");
    }
}
```

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            break;
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            break;
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            System.out.println("July");
            break;
    case 8:
            System.out.println("August");
            break;
    case 9:
            System.out.println("September");
            break;
    case 10:
            System.out.println("October");
            break;
    case 11:
            System.out.println("November");
            break;
     case 12:
             System.out.println("December");
             break;
     default:
             System.out.println("???");
    }
}
```

WHICH ONE IS BETTER???

General Structure of Switch Statement

```
switch (expression) {
    case case1:
        //do this
        break;
    case case2:
        // do that
        break;
    …
    case caseN:
        // do another thing
        break;
    default:
        // if it's not in the rest of the cases, do this
}
// rest of code
```

Practice!

- Take a look at Animal.java and understand the variables and methods in it
- Now go to PetInstructions.java
  - You are leaving your house for a while, and someone has to take care of your pet.
  - Leave some instructions for taking care of your pet depending on what kind of animal your pet is.
    - 1) Change line 13 - use the constructor that takes in a type to specify the type of your pet.
    - 2) Complete the public void instructions(Animal pet) method, using the criteria in the comments.

Using Multiple Classes and Objects

- Objects of different classes can actually interact with each other.
- They can change each others' data, or use each others' methods.
- Example:
  - Students have exam scores.
  - Professors give Students letter grades, based on their score.

Practice

- It’s so unfair that the MeanProfessor gives all the students an F, regardless of what they scored!
- Let’s have a FairProfessor grade the students fairly.
- Go to the FairProfessor class. It’s empty! You need to write the class.
  - 1) Create a String name variable, a constructor that takes in a name, and a get method for the name.
  - 2) Create a gradeStudentsFairly method that takes in a Student and gives them a grade based on the criteria that is in the comments.
  - 3) In the test class, score the same four students using a FairProfessor this time, and print the results.