

# More Branching

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# Announcements

## TODO Reminders:

Readings are due **before** lecture

- Reading 20 (zybooks) – you should have already done that 😊
- Lab 13
- Reading 21 (zyBooks) – you should have already done that 😊
- Lab 14 – optional because of snow day
- Reading 22 (zybooks)
- RPA 10

Keep practicing your RPAs in a spaced and mixed manner 😊

"Circumstances determined  
your **past**, the **present** is  
embracing you, and only you  
can **define your future.**"

-TERESITA MARSAL-AVILA,  
INDIANA IMMIGRATION ATTORNEY



<https://www.pinterest.com/pin/1133007218736753267/>

## Help Desk

Day	Time : Room
Monday	12 PM - 2 PM : CSB 120
Tuesday	6 PM - 8 PM : Teams
Wednesday	3 PM - 5 PM : CSB 120
Thursday	6 PM - 8 PM : Teams
Friday	3 PM - 5 PM : CSB 120
Saturday	12 PM - 4 PM : Teams
Sunday	12 PM - 4 PM : Teams

# Recall Activity

- Analyze the code provided.
- What is going to be printed?

```
public static String switchTest(String name){
    String faeType;
    switch(name) {
        case "dyson":
            faeType = "Werewolf";
            break;
        case "trick":
            faeType = "Sage";
            break;
        case "bo" :
        case "aife":
            faeType = "Succubus";
            break;
        case "vex":
            faeType = "Mesmer";
            break;
        default:
            faeType = "human";
    }
    return faeType;
}
```

```
public static void main(String[] args) {
    System.out.println(switchTest("vex"));
    System.out.println(switchTest("bo"));
    System.out.println(switchTest("kenzi"));
}
```

# Conditional Statements/Ternary Statements

```
if(/*condition is true*/) {  
    // do something  
}else {  
    // do something if condition is false  
}
```

- A way to write a *simple* if/else on one line.

condition ? value if true : value if false

```
String time = 10 > 5 ? "hello" : "goodbye";
```

hello

```
System.out.println(time); // what is printed?
```

# Ternary Statements - Practice

- Analyze the code provided.
- What is going to be printed?
- Consider the following content on number.txt:

2  
3  
5  
6  
7  
11

```
import java.io.File; import java.io.IOException;
import java.util.ArrayList; import java.util.Scanner;

public class TernaryExample {
    public static void main(String args[]){
        ArrayList<Integer> list = new ArrayList<>();
        try {
            Scanner sc = new Scanner(new File("number.txt"));
            while(sc.hasNext()){
                int num = Integer.parseInt(sc.next());
                int numAdd = num % 2 == 0? num: num + 1;
                list.add(numAdd);
            }
        }catch(IOException e){
            e.printStackTrace();
        }
        for(Integer elem: list){
            System.out.println(elem);
        }
    }
}
```

# Switch Statements

- switches
  - a condition that checks each “case” for using ==
  - concise way to compare against group of options
- case
  - the cases to ==
- break
  - keeps executing code – until break is called
- Format:

```
switch(primitive or String) {  
    case <value>:  
        break; //technically optional, but you want it  
    default: // essentially your else  
}
```

```
public static String switchTest(String name){  
    String faeType;  
    switch(name) {  
        case "dyson":  
            faeType = "Werewolf";  
            break;  
        case "trick":  
            faeType = "Sage";  
            break;  
        case "bo" :  
        case "aife":  
            faeType = "Succubus";  
            break;  
        case "vex":  
            faeType = "Mesmer";  
            break;  
        default:  
            faeType = "human";  
    }  
    return faeType;  
}
```

```
public static void main(String[] args) {  
    System.out.println(switchTest("vex"));  
    System.out.println(switchTest("bo"));  
    System.out.println(switchTest("kenzi"));  
}
```

# Switch Statements - Practice

- Write a switch statement to set the total number of days depending on the month read from the terminal. The month will be read as an int number.
- Assume February will have 28 days.

What do you need to change in order to consider that February could have 28 or 29 days depending if we are in a leap year or not?

Leap year:

`(year % 4 == 0) && !(year % 100 == 0)`

or

`(year % 400 == 0)`

# Enumerations

- Declares a name for a new type and possible values for that type
- Methods can use them and return them!

```
public enum Names {  
    DYSON,  
    TRICK,  
    BO,  
    AIFE,  
    VEX,  
    KENZIE  
}
```



# Switch + Enum

- Switch + Enumerations are strong combinations
- Enumeration is part of the case

```
public enum Names {  
    DYSON,  
    TRICK,  
    BO,  
    AIFE,  
    VEX,  
    KENZIE  
}
```

```
public static void main(String[] args) {  
  
    System.out.println(switchTest(Names.VEX));  
    System.out.println(switchTest(Names.BO));  
    System.out.println(switchTest(Names.KENZI));  
}
```

```
public static String switchTest(Names name){  
    String faeType;  
    switch(name) {  
        case Names.DYSON:  
            faeType = "Werewolf";  
            break;  
        case Names.TRICK:  
            faeType = "Sage";  
            break;  
        case Names.BO:  
        case Names.AIFE:  
            faeType = "Succubus";  
            break;  
        case Names.VEX:  
            faeType = "Mesmer";  
            break;  
        default:  
            faeType = "human";  
    }  
    return faeType;  
}
```

# Worksheet

- Complete the Polymorphism worksheet
- Codes from this lecture on switch and enum - <https://github.com/CSU-CompSci-CS163-4/Handouts/tree/main/ClassExamples/10MoreBranching>