More Branching

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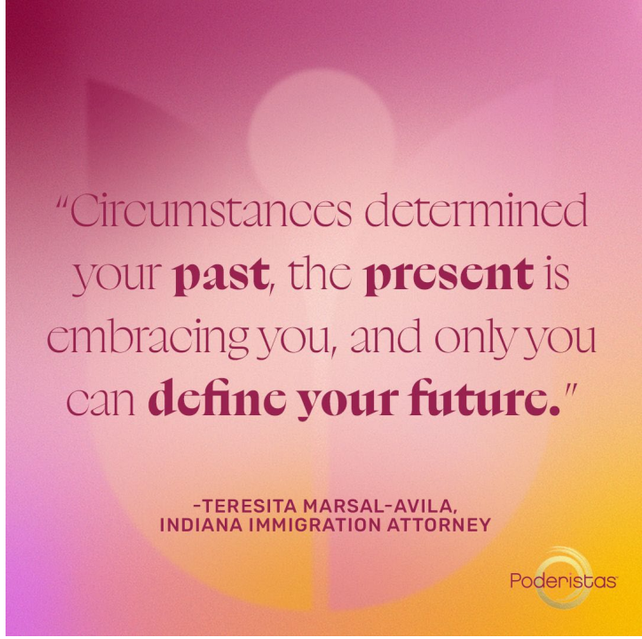
Announcements

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
- Reading 22 (zybooks)
- RPA 10

Keep practicing your RPAs in a spaced and mixed manner ☺



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

Help Desk

Day	Time : Room
Monday	2 PM - 5 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";

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

hello

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