

# Lesson 43: `switch-case-break` (W12D4)

Balboa High School

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# Do Now

- Download `SCB1.java` and save it in a new directory called `~/MOUNTED/apcs-locker/Lesson43`.
- Using the terminal shell, compile the program and then run it. If things don't work as expected, look at the parameter (input value) that `main()` takes. Is it being used?
- Once it runs, try *sending* the program each of these values:
  - 1
  - 2
  - 9
- Prepare to explain how `switch-case-break` appears to work.

Students will learn how `switch-case-break` works for *branching* in a program and have time to work on §6 of PS #6, which includes a `switch-case-break` programming exercise.

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- `switch-case-break` is a specialized (and limited) form of `if()-else if()-else`
- Consider how class `SCB1` could be rewritten using `if()` statements...

## SCB: Special Case of if()

```
public class SCB2 {  
  
    public static void main(String[] args) {  
        int i = new Integer(args[0]);  
  
        if (i == 1) {  
            System.out.println("i is 1!");  
        } else if ( i == 2 ) {  
            System.out.println("i is 2!");  
        } else if ( i == 3 ) {  
            System.out.println("i is 3!");  
        } else {  
            System.out.println("your int...!");  
        }  
    }  
}
```

# So why have SCB?

Advantages of SCB over `if()`:

- When there are numerous cases, SCB is usually more readable and concise.
- When you need to *dispatch* execution to based on a simple condition. For example. . .

## Example of SCB for Dispatch: ATM

- Save `AtmWelcome.java` in your Lesson43 directory.
- Run the program from the terminal shell.
- Read through `main()` and see how the `switch()` statement works.
- Answer: *So far, we've seen switch/case/break operate on two data types, \_\_\_\_\_ and \_\_\_\_\_.*
- Once done, have a look at how user input is obtained via `getChoice()`. Play with the `#` in square brackets to see if you can capture the 3<sup>rd</sup> typed character!



# Things to Try with SCB

- What happens when you comment out the `break` statement from one of the cases? Try this for the `W/w` case and note what happens when you choose to *withdraw funds*.
- If you remove the entire default case, what happens when enter a letter not associated with any of the menu options, e.g. 'u'?

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# Enumerated Data Types

- So far, we've switched on ints and chars.
- Last type that we can use with SCB: *Enumerated Data Types*.
- If there's a variable that should hold a small set of values — and no others — then `enum` might be a good choice.
- an `enum` object can be used with SCB.

# Enumerated Data Types: Example

- Save `StudentGrades.java` in your Lesson43 folder.
- Fix the problem leading to the compilation error.
- Fix the bug that is causing Ralph to lose out on dinner at the *Olive Garden*<sup>TM</sup>.
- If you have time: What happens when you try to assign a `Grade` value that's not predefined? E.g.,

```
Grade jeansGrade = Grade.A;
```

- More information about *enumerated data types* is available in the assigned Litvin reading.

- Work on §6 of PS #6.
- HW over the coming nights: Finish PS #6, which includes finishing the *Craps Lab*.
- Next class:
  - last meeting before PS #6 is due
  - focus will be on supporting you as you finish PS #6!

Finish §6 of PS #6 and start on §7.