SWITCH STATEMENTS

zyBook 3.14

Oracle - Java Tutorial: The switch Statement

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SWITCH STATEMENTS

```
switch( <variable> ){
  case <value>:
     <statements>;
     break;
  case <value>:
     <statements>;
     break;
  ...
  default: //optional
     <statements>;
     <break>;
}
```

- Control the flow of your program
- May be used in place of complex if-else blocks
- switch statements can be cleaner and easier to maintain that if-else blocks
- If the calculated value does not match any listed values then no case code is executed, unless the optional default case is implemented.
- Remember to include break after the statements for each case!!! (unless you explicitly intend to fall through)
- Can only switch on variables of type: byte , short , char , int , enum types, String objects (Java 7 and later)

```java
import java.util.Scanner;
public class RaceResults {
    public static void main(String[] args) {
        Scanner in = new Scanner(System.in);
        System.out.print("Enter place (int): ");
        int place = in.nextInt();
        if (place == 1) {
            System.out.println("First Place!");
        } else if (place == 2) {
            System.out.println("Second Place!");
        } else if (place == 3) {
            System.out.println("Third Place!");
        } else {
            System.out.println("Finisher!");
        }
    }
}
```

```
$ javac -d bin -cp bin src/RaceResults.java

$ java -cp bin RaceResults
Enter place (int): 1
First Place!

$ java -cp bin RaceResults
Enter place (int): 3
Third Place!

$ java -cp bin RaceResults
Enter place (int): 10
Finisher!
```

```java
import java.util.Scanner;
public class RaceResultsSwitch {
    public static void main(String[] args) {
        Scanner in = new Scanner(System.in);
        System.out.print("Enter place (int): ");
        int place = in.nextInt();
        switch (place) {
            case 1:
                System.out.println("First Place!");
                break;
            case 2:
                System.out.println("Second Place!");
                break;
            case 3:
                System.out.println("Third Place!");
                break;
            default:
                System.out.println("Finisher!");
                break;
        }
    }
}
```

```
$ javac -d bin -cp bin src/RaceResultsSwitch.java

$ java -cp bin RaceResultsSwitch
Enter place (int): 1
First Place!

$ java -cp bin RaceResultsSwitch
Enter place (int): 3
Third Place!

$ java -cp bin RaceResultsSwitch
Enter place (int): 10
Finisher!
```

CASES CANNOT BE RANGES!

```
1  import java.util.Scanner;
2
3  public class RaceResultsMedalInvalid {
4      public static void main(String[] args) {
5          Scanner in = new Scanner(System.in);
6          System.out.print("Enter place (int): ");
7          int place = in.nextInt();
8          switch (place) {
9              case <=3:
10                 System.out.println("You earned a medal!");
11                 break;
12             default:
13                 System.out.println("You did not earn a medal.");
14                 break;
15         }
16     }
17 }
```

```
$ javac -d bin -cp bin src/RaceResultsMedalInvalid.java
src/RaceResultsMedalInvalid.java:9: error: illegal start of type
            case <=3:
                 ^
src/RaceResultsMedalInvalid.java:9: error: ';' expected
            case <3:
                  ^
2 errors
```

```java
import java.util.Scanner;

public class RaceResultsMedal {
    public static void main(String[] args) {
        Scanner in = new Scanner(System.in);
        System.out.print("Enter place (int): ");
        int place = in.nextInt();
        switch (place) {
            case 1:
            case 2:
            case 3:
                System.out.println("You earned a medal!");
                break;
            default:
                System.out.println("You did not earn a medal.");
                break;
        }
    }
}
```

```
$ javac -d bin -cp bin src/RaceResultsMedal.java

$ java -cp bin RaceResultsMedal
Enter place (int): 1
You earned a medal!

$ java -cp bin RaceResultsMedal
Enter place (int): 3
You earned a medal!

$ java -cp bin RaceResultsMedal
Enter place (int): 10
You did not earn a medal.
```

SWITCH STATEMENT REMINDERS

- Cannot use ranges as cases
- Can only switch on byte , short , char , int , enum types, String objects
- Values are matched exactly. For example: uppercase values will not match to lowercase values
- Remember your break statements!