Nuances

General Tips:

- Getter and setter
- Override and super
- Java automatically collects garbage
- &&/|| checks left first
- + strings makes a new string every time, if you want to do in a loop use stringbuilder(reduce memory)
- Everything in Java not explicitly set to something, is initialized to a zero value
  - references (anything that holds an object):null
  - int/short/byte:0
  - float/double:0.0
  - booleans: false.
  - array of something, all entries are also zeroed

Virtual:

- a virtual function (or method) is a function whose behavior can be overridden within an inheriting class by a function with the same signature to provide the polymorphic behavior
- according to definition, every non-static method in JAVA is by default virtual method except final and private methods

Switch Statement:

- All matching cases will be run unless their is a break statement
- Example
  -
    ```
    switch (month) {
               case 1: monthString = "January";
                       break;
               case 2: monthString = "February";
                       break;
               case 3: monthString = "March";
                       break;
    ```

```
           case 4: monthString = "April";
                   break;
           case 5: monthString = "May";
                   break;
           case 6: monthString = "June";
                   break;
           case 7: monthString = "July";
                   break;
           case 8: monthString = "August";
                   break;
           case 9: monthString = "September";
                   break;
           case 10: monthString = "October";
                   break;
           case 11: monthString = "November";
                   break;
           case 12: monthString = "December";
                   break;
           default: monthString = "Invalid month";
                   break;
       }
```

Breaking out of for loops:

- if you want to skip a particular iteration, use continue

  -
    ```
    for(int i=0 ; i<5 ; i++){

        if (i==2){

          continue;
        }
    }
    ```
- if you want to break out of the immediate loop use break

  -
    ```
    for(int i=0 ; i<5 ; i++){

        if (i==2){

            break;
        }
    }
    ```
- if there are 2 loop, outer and inner.... and you want to break out of both the loop from the inner loop, use break with label

-
  ```
  lab1: for(int j=0 ; j<5 ; j++){
       for(int i=0 ; i<5 ; i++){

          if (i==2){

            break lab1;
          }
       }
  }
  ```

Things to override in new object (for hashing and equality uses):

- public int hashCode()
- public boolean equals(Object object)

```
ex: Tiger
   @Override
   public boolean equals(Object object) {
      boolean result = false;
      if (object == null || object.getClass() != getClass()) {
         result = false;
      } else {
         Tiger tiger = (Tiger) object;
         if (this.color == tiger.getColor()
               && this.stripePattern == tiger.getStripePattern()) {
            result = true;
         }
      }
      return result;
   }
```

Useful built in functions:

- Arrays
  - Arrays.binarySearch(arr, target)
    - Negative value shows where it should be
  - Arrays.sort(arr)

Sources:

- https://www.cs.utexas.edu/~scottm/cs307/codingSamples.htm
- https://www.jitendrazaa.com/blog/java/virtual-function-in-java/