# Midterm 1- Java

- Arrays
  ```
  int [] array;  //reference to null array
  array = new int [100];  // references an array of 100 ints
  ```
  length:   int arrayLength = arrayName.length
  index:   arrayName [0]

- Reference : variable that stores memory address where object resides
  dot operator selects method applied to object

- <u>Strings</u>
  ```
  String message = "Hello";
  ```
  can concatenate: "this" + "that" >> "this that"

- <u>Classes</u> → storedValue is private, only via read & write
  ```
  public class IntCell {
      public int read();
      public int write(int x);
      private int stored Value;
  }

  public class TestIntCell {
      public static void main (String [] args) {
          IntCell m = new IntCell();
          m.write(5);
          System. out. println ( "cell contents" + m. read());

          // m.storedValue = 0;  this illegal, storedValue is private
  ```

- <u>constructor</u>
  ```
  Date d1 = new Date();
  Date d2 = new Date (4, 15, 2010);
  ```
  Need to have default constructor

  Call by  myMethod();
  can take args

- Method → functions basically
  ```
  public class MyClass;
      static void myMethod() {
          // code
      }
  {
  ```

- <u>Variables</u>
  local vars → declared in methods, constructors, or blocks. Locally visible, need initialization
  instance vars → declared in a class, outside method, constructor, or block
  ie public String name;
      private double salary;
  assign value with a constructor