CSC 1051 Final Exam "Cheat Sheet"

Drawing a Line

- `page.drawLine(10, 20, 150, 45);`
- Or `page.drawLine(150, 45, 10, 20);`

Drawing a Rectangle

- `page.drawRect(50, 20, 100, 40);`

Drawing an Oval

- `page.drawOval(175, 20, 50, 80);`

Drawing an Arc

- An arc is defined by an oval, a start angle, and an arc angle:

Filled vs unfilled shapes

- Instead of using `drawRect()`, `drawOval()` etc, we can use `fillRect()`, `fillOval()` etc
- We can set the color using `setColor()`
- See `Snowman.java`
- See also Snowman applet on a webpage
### Some methods of the String class

<table>
<thead>
<tr>
<th>boolean</th>
<th><code>isEmpty()</code></th>
<th>Returns true if, and only if, <code>length()</code> is 0.</th>
</tr>
</thead>
<tbody>
<tr>
<td>char</td>
<td><code>charAt(int index)</code></td>
<td>Returns the char value at the specified index.</td>
</tr>
<tr>
<td>int</td>
<td><code>length()</code></td>
<td>Returns the length of this string.</td>
</tr>
<tr>
<td>String</td>
<td><code>toLowerCase()</code></td>
<td>Converts all of the characters in this String to lower case using the rules of the default locale.</td>
</tr>
</tbody>
</table>

### Some methods of the Random class

<table>
<thead>
<tr>
<th>double</th>
<th><code>nextDouble()</code></th>
<th>Returns the next pseudorandom, uniformly distributed double value between 0.0 and 1.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>int</td>
<td><code>nextInt()</code></td>
<td>Returns the next pseudorandom, uniformly distributed int value from this random number generator's sequence.</td>
</tr>
<tr>
<td>int</td>
<td><code>nextInt(int n)</code></td>
<td>Returns a pseudorandom, uniformly distributed int value between 0 (inclusive) and the specified value (exclusive), drawn from this random number generator's sequence.</td>
</tr>
</tbody>
</table>

### Some methods of the Math class

<table>
<thead>
<tr>
<th>static double</th>
<th><code>abs(double a)</code></th>
<th>Returns the absolute value of a double value.</th>
</tr>
</thead>
<tbody>
<tr>
<td>static double</td>
<td><code>cos(double a)</code></td>
<td>Returns the trigonometric cosine of an angle.</td>
</tr>
<tr>
<td>static double</td>
<td><code>pow(double a, double b)</code></td>
<td>Returns the value of the first argument raised to the power of the second argument.</td>
</tr>
<tr>
<td>static double</td>
<td><code>random()</code></td>
<td>Returns a double value greater than or equal to 0.0 and less than 1.0.</td>
</tr>
<tr>
<td>static long</td>
<td><code>round(double a)</code></td>
<td>Returns the closest long to the argument.</td>
</tr>
<tr>
<td>static double</td>
<td><code>sin(double a)</code></td>
<td>Returns the trigonometric sine of an angle.</td>
</tr>
<tr>
<td>static double</td>
<td><code>sqrt(double a)</code></td>
<td>Returns the correctly rounded positive square root of a double value.</td>
</tr>
</tbody>
</table>

### Some Java Escape Sequences and their meaning:

- `\t` tab
- `\n` newline
- `\"` double quote
- `\'` single quote
- `\\` backslash
Arrays - Review

• Declaration:

```java
double[] scores = new double[10];
```

The entire array has a single name

• Initialization:

```java
scores[2] = 9.4;
```

• Instantiation:

```
double[] scores = {7.9, 8.7, 9.4, 8.2, 6.7, 9.8, 8.7, 8.1, 7.4, 9.1};
```

2D Arrays - Overview

```java
double[][] courseGrade = new double[3][10];
```

```
0 1 2 3 4 5 6 7 8 9
7.9 8.7 9.4 8.2 6.7 9.8 8.7 8.1 7.4 9.1
0 1 2 3 4 5 6 7 8 9
9.3 5.8 6.9 5.5 9.0 8.3 7.7 9.2 9.8 8.2
0 1 2 3 4 5 6 7 8 9
8.9 8.0 8.4 6.2 7.7 7.3 9.6 6.1 7.8 7.3
```

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