CSE 142 Section Handout #2

Cheat Sheet

Primitive types (2.1) (kinds of data that can be used by your programs)

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>int</td>
<td>integers</td>
<td>42, -3, 92851</td>
</tr>
<tr>
<td>double</td>
<td>real numbers</td>
<td>3.14, 2.0</td>
</tr>
<tr>
<td>char</td>
<td>a character of text</td>
<td>'a', 'X', '\n'</td>
</tr>
<tr>
<td>boolean</td>
<td>logical values</td>
<td>true, false</td>
</tr>
</tbody>
</table>

Expressions (2.1) (compute a value using arithmetic operations)

- precedence: () before */% before +- 
- with int, / is integer quotient and % is integer remainder
- Strings can be concatenated with other values

<table>
<thead>
<tr>
<th>Expression</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 * 2 + 3 * 5 / 4</td>
<td>&quot;$5 + 9.0 / 4.0 + 1&quot;</td>
</tr>
<tr>
<td>2 + 3 * 5 / 4</td>
<td>&quot;$5 + 2.25 + 1&quot;</td>
</tr>
<tr>
<td>2 + 15 / 4</td>
<td>&quot;$2.25&quot; + 1</td>
</tr>
<tr>
<td>2 + 3</td>
<td>&quot;$2.251&quot;</td>
</tr>
</tbody>
</table>

Variables (2.2) (pieces of memory that can store a value of a particular type)

type name;
name = value;

type name = value; declaration (creates a variable but doesn't give it any value)
assignment (stores a value into a variable)
declaration/initialization (creates a variable and stores a value into it)

```
int x;
int y = 3;
x = 1 + y * 2; // x stores the value 7
```

The for loop (2.3) (repeats a group of statements a fixed number of times)

```
for (initialization; test; update) {
  statement;
  statement;
  ...
  statement;
}
```

```
for (int i = 1; i <= 10; i++) {
  System.out.println(i + " squared is " + (i * i));
}
```

Nested for loops (2.3) (loops inside loops, can be used to produce complex text patterns)

```
for (int line = 1; line <= 5; line++) {
  for (int j = 1; j <= (-1 * line + 5); j++) {
    System.out.print(".");
  }
  System.out.println(line);
}
```

Class constants (2.4) (unchangeable global values that can be seen throughout your program)

```
public static final type name = value;
public static final int DAYS_PER_WEEK = 7;
```