

1.

Taking an input variable, storing it in memory, taking a new input variable, adding that to the variable stored, and store the new value in memory and repeat, dividing the total by 10 and requesting the memory for the final int variable, assigning the result to the new variable.

2.

$$n + (n + 1) + (n + 2) + (n + 3) + (n + 4)$$

N would be added to the sum of N and 1, added to the sum of N and 2, added to the sum of N and 3, added to the sum of N and 4.

3.

The shift can be found by subtracting an arbitrary shift from N, and dividing with modulus by 26 so it wraps around. This arbitrary shift (x) can be an increment in a loop.

4.

A loop where N equals N + X, and asking for input after each repetition of the loop. X being the next homework average after the previous (or initial).

5.

15
46
70
106
160
80
40
20
10
16
8
4
2
1

6.

3
10
5
16
8
4
2
1

8.

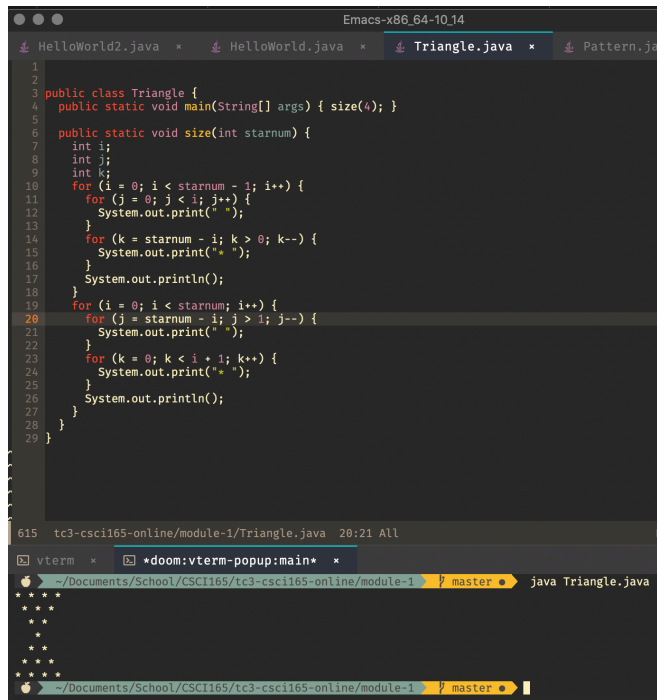
Circle
radius : public

calculateArea () : double

Triangle
a : public b : public c : public

calculatePerimeter() : double calculateArea() : double

Triangle

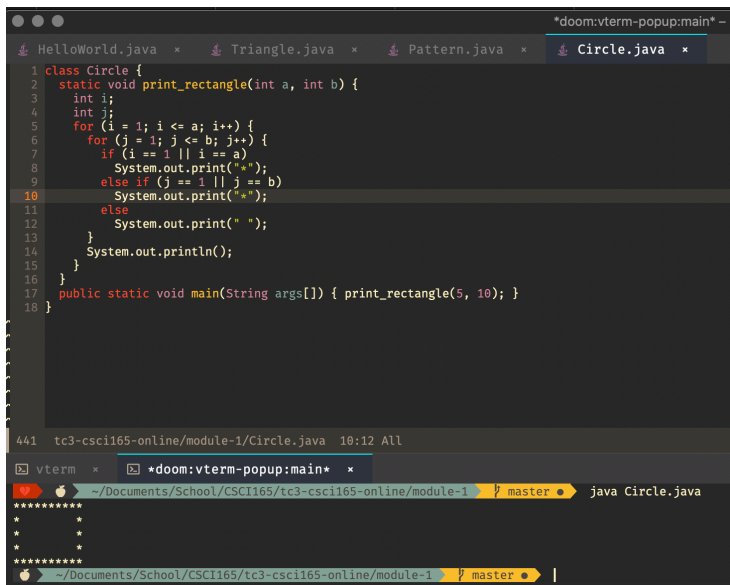


The screenshot shows the Emacs editor with the file `Triangle.java` open. The code defines a `Triangle` class with a `main` method that calls `size(4)`. The `size` method uses nested loops to print a triangle of asterisks. Below the editor, a `vterm` window shows the output of the program, which is a triangle of asterisks.

```
1
2
3 public class Triangle {
4     public static void main(String[] args) { size(4); }
5
6     public static void size(int starnum) {
7         int i;
8         int j;
9         int k;
10        for (i = 0; i < starnum - 1; i++) {
11            for (j = 0; j < i; j++) {
12                System.out.print(" ");
13            }
14            for (k = starnum - i; k > 0; k--) {
15                System.out.print("* ");
16            }
17            System.out.println();
18        }
19        for (i = 0; i < starnum; i++) {
20            for (j = starnum - i; j > 1; j--) {
21                System.out.print(" ");
22            }
23            for (k = 0; k < i + 1; k++) {
24                System.out.print("* ");
25            }
26            System.out.println();
27        }
28    }
29 }
```

```
615 tc3-csci165-online/module-1/Triangle.java 20:21 All
vterm x *doom:vterm-popup:main* x
~/Documents/School/CSCI165/tc3-csci165-online/module-1 master java Triangle.java
*****
*   *
*  *
* *
*
*****
~/Documents/School/CSCI165/tc3-csci165-online/module-1 master
```

Circle



The screenshot shows the Emacs editor with the file `Circle.java` open. The code defines a `Circle` class with a `print_rectangle` method that prints a rectangle of asterisks. The `main` method calls `print_rectangle(5, 10)`. Below the editor, a `vterm` window shows the output of the program, which is a rectangle of asterisks.

```
1 class Circle {
2     static void print_rectangle(int a, int b) {
3         int i;
4         int j;
5         for (i = 1; i <= a; i++) {
6             for (j = 1; j <= b; j++) {
7                 if (i == 1 || i == a)
8                     System.out.print("*");
9                 else if (j == 1 || j == b)
10                    System.out.print("*");
11                else
12                    System.out.print(" ");
13            }
14            System.out.println();
15        }
16    }
17    public static void main(String args[]) { print_rectangle(5, 10); }
18 }
```

```
441 tc3-csci165-online/module-1/Circle.java 10:12 All
vterm x *doom:vterm-popup:main* x
~/Documents/School/CSCI165/tc3-csci165-online/module-1 master java Circle.java
*****
*   *
*   *
*   *
*   *
*   *
*   *
*   *
*   *
*   *
*   *
*   *
*   *
*****
~/Documents/School/CSCI165/tc3-csci165-online/module-1 master
```

Hourglass

```
1 public class hour {
2     public static void main(String[] args) {
3         int n = 5;
4         for (int i = n; i >= 1; i--) {
5             for (int j = 1; j <= i; j++) {
6                 System.out.print('*');
7             }
8             System.out.println('\n');
9         }
10    }
11 }
```

233 tc3-csci165-online/module-1/hour.java 1:8 All

vterm x *doom:vterm-popup:main x

```
*****
****
***
**
*
```