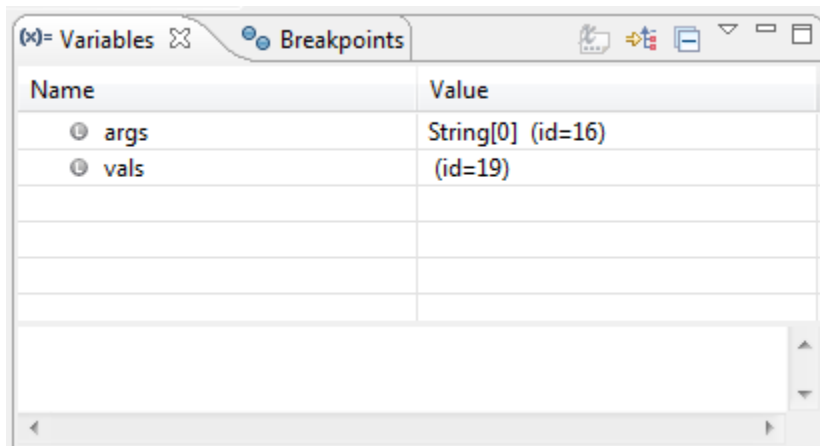


CS162, LAB 1

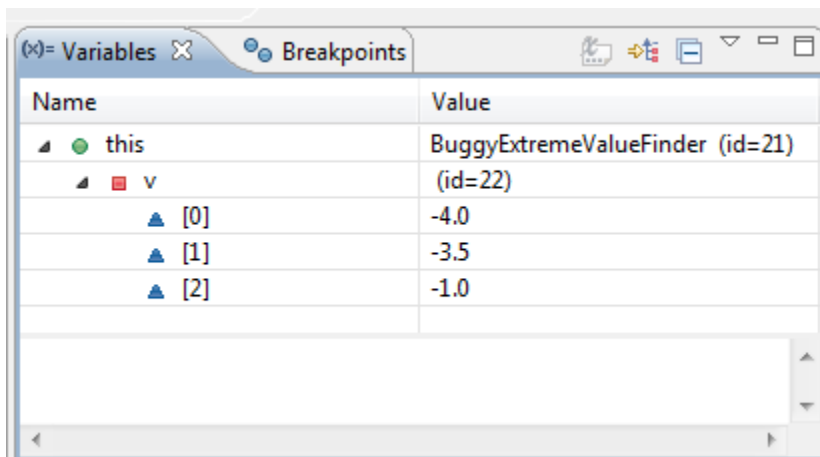
SECTION 1, EXTREMEVALUEFINDER

Q1



| Name | Value |
|------|-------------------|
| args | String[0] (id=16) |
| vals | (id=19) |
| | |
| | |
| | |
| | |

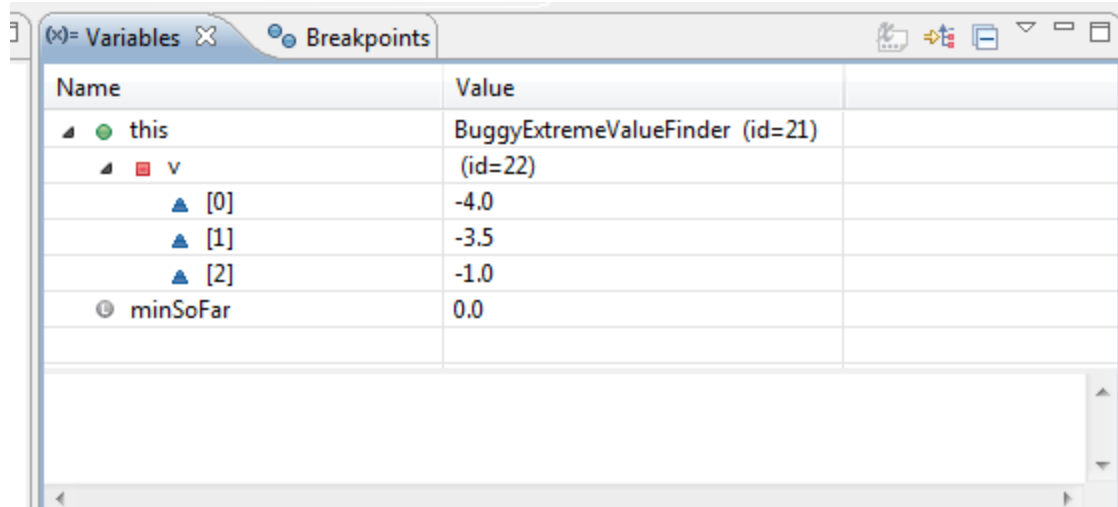
Q2



| Name | Value |
|------|---------------------------------|
| this | BuggyExtremeValueFinder (id=21) |
| v | (id=22) |
| [0] | -4.0 |
| [1] | -3.5 |
| [2] | -1.0 |
| | |
| | |

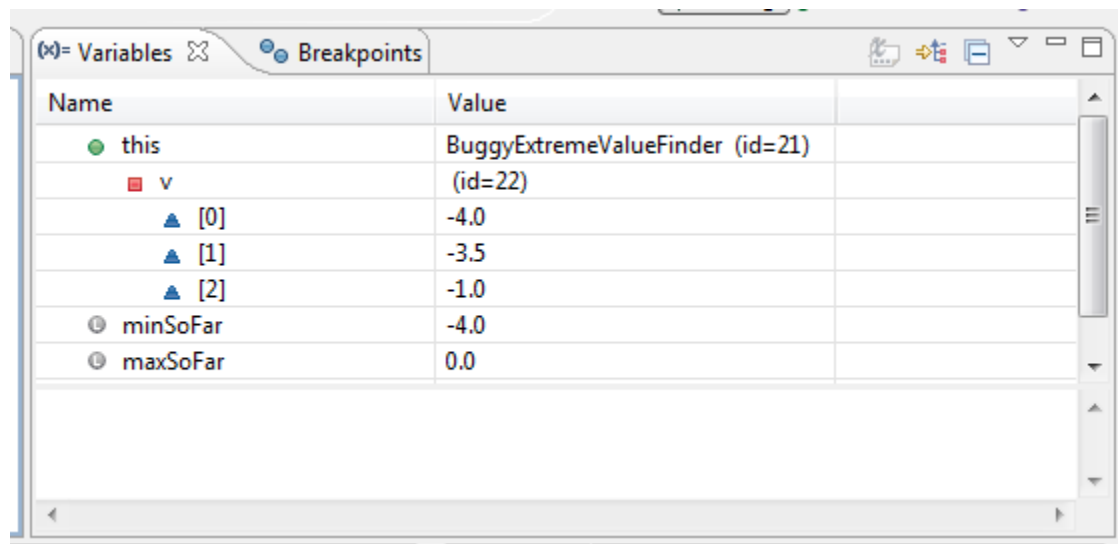
Q3

BEFORE ITERATION



| Name | Value |
|----------|---------------------------------|
| this | BuggyExtremeValueFinder (id=21) |
| v | (id=22) |
| [0] | -4.0 |
| [1] | -3.5 |
| [2] | -1.0 |
| minSoFar | 0.0 |

ITERATON 1; MIN = -4, MAX = 0



| Name | Value |
|----------|---------------------------------|
| this | BuggyExtremeValueFinder (id=21) |
| v | (id=22) |
| [0] | -4.0 |
| [1] | -3.5 |
| [2] | -1.0 |
| minSoFar | -4.0 |
| maxSoFar | 0.0 |

ITERATION 2; NO CHANGE

| Variables | | Breakpoints |
|------------|---------------------------------|-------------|
| Name | Value | |
| ● this | BuggyExtremeValueFinder (id=21) | |
| ■ v | (id=22) | |
| ▲ [0] | -4.0 | |
| ▲ [1] | -3.5 | |
| ▲ [2] | -1.0 | |
| ⓘ minSoFar | -4.0 | |
| ⓘ maxSoFar | 0.0 | |

Q4

Loop executed 2 times.

Q5

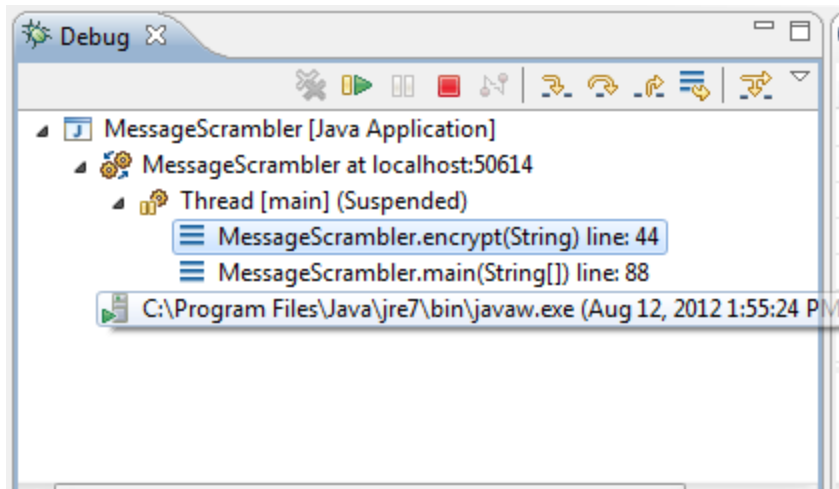
First, I had to correct the length of the iteration loop from `for(int i = 0; i < (this.v.length-1); i++)` to `for(int i = 0; i < (this.v.length); i++)`. This way it executes over every element in the array.

Also, it checks for the maximum against zero, which isn't necessarily the max of the array, if all the numbers are negative. So, I changed the max code to check against the absolute value of the array element, like so:

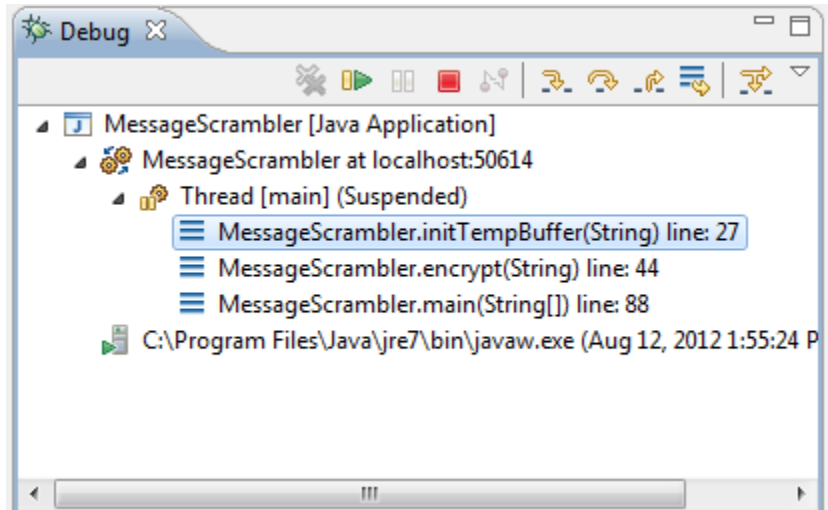
```
if( Math.abs(this.v[i]) > maxSoFar ) maxSoFar = this.v[i];
```

SECTION 2, THE MESSAGE SCRAMBLER

Q1



Q2



We were in the MessageScrambler.main() function and it called MessageScrambler.encrypt(), now we are looking at the functions inside that.

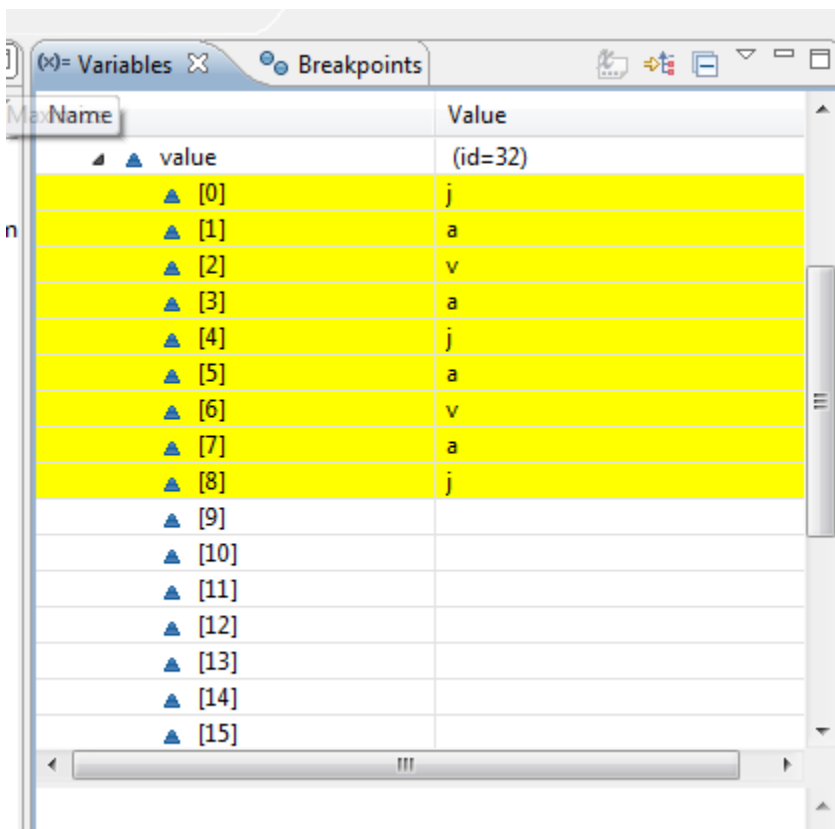
Q3

Philomath

| | |
|------------|----------------------|
| tempBuffer | StringBuffer (id=28) |
| count | 9 |
| value | (id=32) |
| [0] | p |
| [1] | h |
| [2] | i |
| [3] | l |
| [4] | o |
| [5] | m |
| [6] | a |
| [7] | t |
| [8] | h |
| [9] | |
| [10] | |
| [11] | |

Q4

Javajavaj

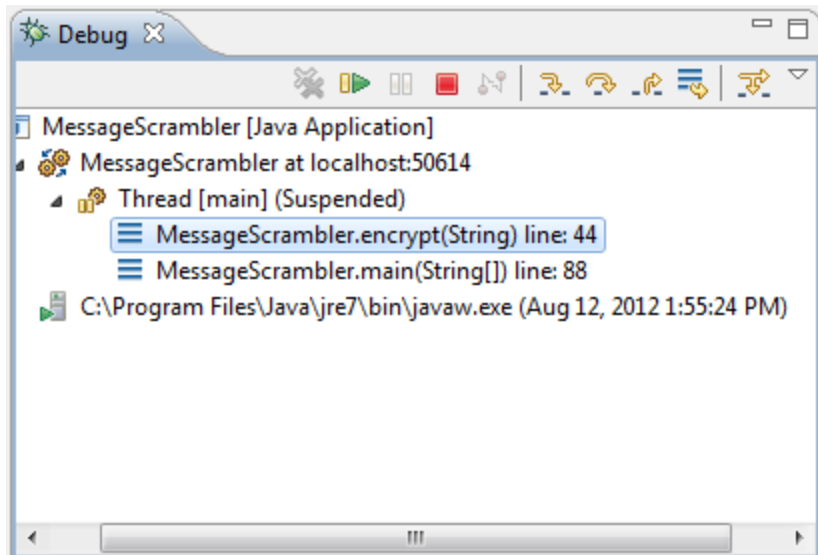


The screenshot shows an IDE's 'Variables' window. The window has tabs for 'Variables' and 'Breakpoints'. The 'Variables' tab is active, showing a table with 'Name' and 'Value' columns. The variable 'value' is expanded, showing an array of characters. The array elements from index 0 to 8 are highlighted in yellow. The values are: j, a, v, a, j, a, v, a, j. The array has a length of 16, with indices up to 15 shown.

| Name | Value |
|-------|---------|
| value | (id=32) |
| [0] | j |
| [1] | a |
| [2] | v |
| [3] | a |
| [4] | j |
| [5] | a |
| [6] | v |
| [7] | a |
| [8] | j |
| [9] | |
| [10] | |
| [11] | |
| [12] | |
| [13] | |
| [14] | |
| [15] | |

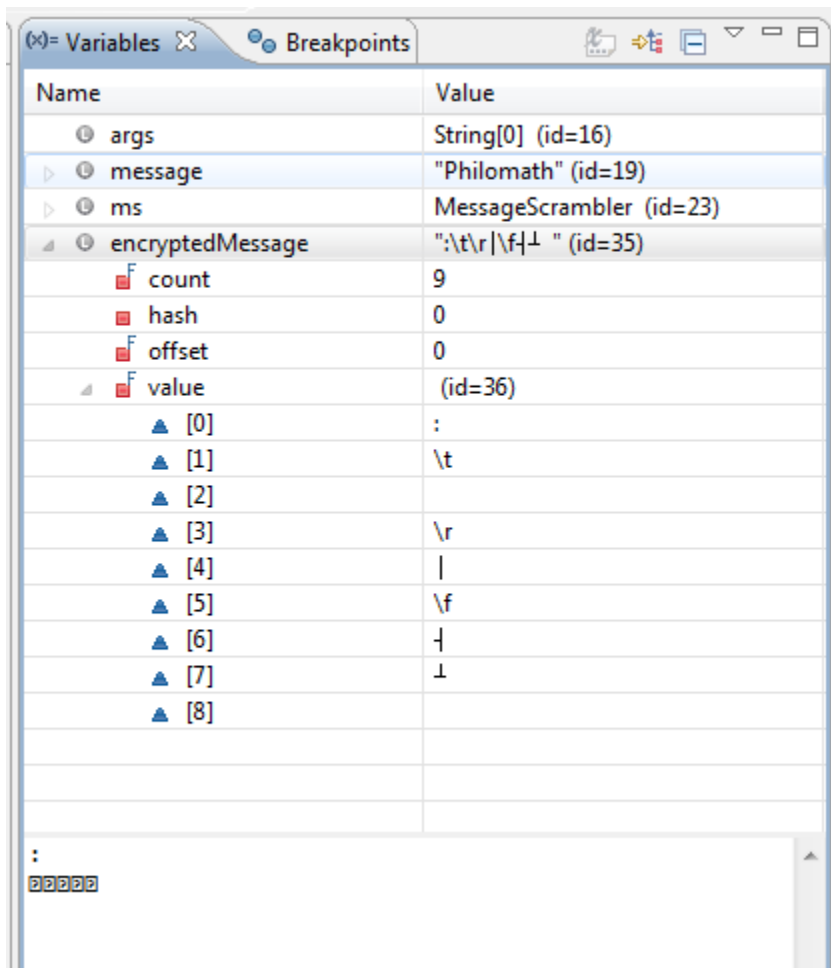
Q5

We exited that function back to the function that called it. Thus the call stack shows the previous function



Q6

:\t\r\|f|



Q7

Philomath

The screenshot shows a debugger's Variables window. The window has two tabs: 'Variables' and 'Breakpoints'. The 'Variables' tab is active. The window displays a tree view of variables and their values. The 'decryptedMessage' variable is expanded, showing its 'value' array containing the string 'Philomath'.

| Name | Value |
|------------------|---------------------|
| hash | 0 |
| offset | 0 |
| value | (id=36) |
| [0] | : |
| [1] | \t |
| [2] | |
| [3] | \r |
| [4] | |
| [5] | \f |
| [6] | |
| [7] | |
| [8] | |
| decryptedMessage | "Philomath" (id=37) |
| count | 9 |
| hash | 0 |
| offset | 0 |
| value | (id=38) |
| [0] | P |
| [1] | h |
| [2] | i |
| [3] | l |
| [4] | o |
| [5] | m |
| [6] | a |
| [7] | t |
| [8] | h |

Philomath