Problem Statement:

Request and store two integer values for the length and width of a rectangle that will be drawn to the console with asterisks (\*). These values must be between 1 and 20 and if they are any different have the user reinput them. This part of the program must repeat until the user inputs the exit code 99 into one of the prompts.

Sample Softcopy:

Welcome to Rectangle Draw It!!

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Enter values between 1 and 20...

Please enter the length of the rectangle > [5]

Please enter the width of the rectangle > [3]

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Please enter the length of the rectangle > [99]

Symbolic Constant List:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| IDENTIFIER | DESCRIPTION | DATA TYPE | VALUE | USAGE | DESTINATION |
| minSize | The minimum size for any side of the rectangle | integer | 1 | Used to clamp the user’s input between a range | Screen |
| maxSize | The maximum size for any side of the rectangle | integer | 20 | Used to clamp the user’s input between a range | Screen |
| EXIT\_CODE | The number to be entered into any prompt to exit the program | integer | 99 | Will be entered into any prompt and the program will exit | N/A |

Variable List:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| IDENTIFIER | DESCRIPTION | DATA TYPE | VALUE | USAGE | DESTINATION |
| num1 | The first number that is entered into the program by the user | integer | 1-20 | Used to draw the length of the rectangle | N/A |
| num2 | The second number that is entered into program by the user | integer | 1-20 | Used to draw the width of the rectangle | N/A |

Algorithm:

1. Start
2. Output title block as shown in softcopy
3. Blank Line
4. Request length of rectangle as show in softcopy
5. Display prompt for length
6. Read user input and store it in variable
7. Check if input is exit code, if so exit
8. Check if input is out of range, if so re-prompt
9. Request width of rectangle as shown in softcopy
   1. Display prompt for length
   2. Read user input and store it in variable
   3. Check if input is exit code, if so exit
   4. Check if input is out of range, if so re-prompt
10. Draw rectangle to screen as shown in softcopy
    1. Draw length of the first row
    2. If width is >= 2, break line
    3. Draw length again
    4. Repeat until width has been met
11. Restart unless program has been exited

Data Tracing Chart:

|  |  |  |  |
| --- | --- | --- | --- |
|  | Input | | Calculated |
|  | num1 | num2 |  |
| D2 | 5 |  |
| E2 |  | 3 |

Test Softcopy:

Welcome to Rectangle Draw It!!

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Enter values between 1 and 20...

D1 Please enter the length of the rectangle > D2 [5]

E1 Please enter the width of the rectangle > E2 [3]

\*\*\*\*\* F1 F2

\*\*\*\*\* F3

\*\*\*\*\* F4

Please enter the length of the rectangle > [99] G