

Reporting tasks

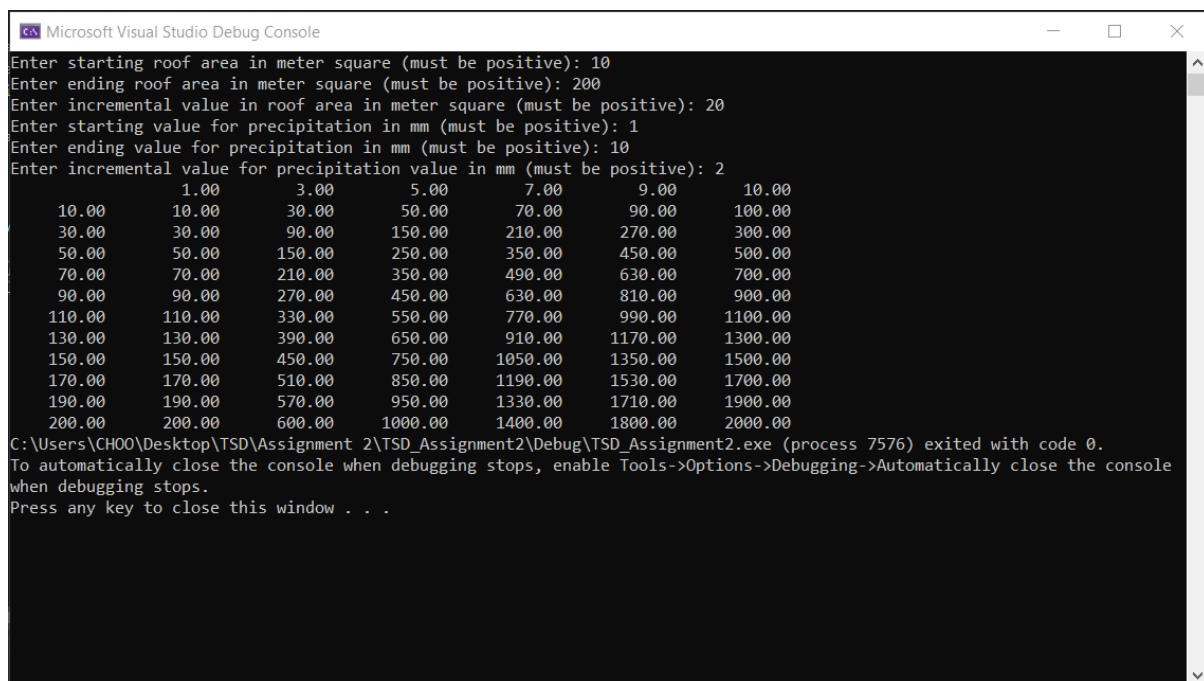
What are the limitations of using a recursive function instead of loops to generate the rainwater harvesting table?

One of the limitations of using a recursive function instead of loops to generate the rainwater harvesting table is that it uses more processor time to generate the table as compared to using loops to generate the table. Another limitation is by using a recursive function it will take up more computer memory space and if the memory runs out the program might crash. The final limitation of using a recursive function is it can be difficult to understand and trace a bug or problem in the code as compared to loops.

[93 words]

Testing tasks

Screenshots of 3 test inputs with different sets of input values



```
Microsoft Visual Studio Debug Console
Enter starting roof area in meter square (must be positive): 10
Enter ending roof area in meter square (must be positive): 200
Enter incremental value in roof area in meter square (must be positive): 20
Enter starting value for precipitation in mm (must be positive): 1
Enter ending value for precipitation in mm (must be positive): 10
Enter incremental value for precipitation value in mm (must be positive): 2
1.00      3.00      5.00      7.00      9.00      10.00
10.00     10.00     30.00     50.00     70.00     90.00     100.00
30.00     30.00     90.00     150.00    210.00    270.00    300.00
50.00     50.00     150.00    250.00    350.00    450.00    500.00
70.00     70.00     210.00    350.00    490.00    630.00    700.00
90.00     90.00     270.00    450.00    630.00    810.00    900.00
110.00    110.00    330.00    550.00    770.00    990.00    1100.00
130.00    130.00    390.00    650.00    910.00    1170.00    1300.00
150.00    150.00    450.00    750.00    1050.00    1350.00    1500.00
170.00    170.00    510.00    850.00    1190.00    1530.00    1700.00
190.00    190.00    570.00    950.00    1330.00    1710.00    1900.00
200.00    200.00    600.00    1000.00    1400.00    1800.00    2000.00
C:\Users\CH00\Desktop\TSD\Assignment 2\TSD_Assignment2\Debug\TSD_Assignment2.exe (process 7576) exited with code 0.
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the console
when debugging stops.
Press any key to close this window . . .
```

Figure (1): Screenshot above showing user enter the first set of input values for starting roof area, ending roof area, incremental value for roof area, starting value for precipitation, ending value for precipitation and incremental value for precipitation.

```

Microsoft Visual Studio Debug Console
Enter starting roof area in meter square (must be positive): 100
Enter ending roof area in meter square (must be positive): 1000
Enter incremental value in roof area in meter square (must be positive): 150
Enter starting value for precipitation in mm (must be positive): 10
Enter ending value for precipitation in mm (must be positive): 100
Enter incremental value for precipitation value in mm (must be positive): 20
  10.00    30.00    50.00    70.00    90.00   100.00
100.00  1000.00  3000.00  5000.00  7000.00  9000.00 10000.00
250.00  2500.00  7500.00 12500.00 17500.00 22500.00 25000.00
400.00  4000.00 12000.00 20000.00 28000.00 36000.00 40000.00
550.00  5500.00 16500.00 27500.00 38500.00 49500.00 55000.00
700.00  7000.00 21000.00 35000.00 49000.00 63000.00 70000.00
850.00  8500.00 25500.00 42500.00 59500.00 76500.00 85000.00
1000.00 10000.00 30000.00 50000.00 70000.00 90000.00 100000.00
C:\Users\CHOO\Desktop\TSD\Assignment 2\TSD_Assignment2\Debug\TSD_Assignment2.exe (process 2124) exited with code 0.
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the console when debugging stops.
Press any key to close this window . . .

```

Figure (2): Screenshot above showing user enter the second set of input values for starting roof area, ending roof area, incremental value for roof area, starting value for precipitation, ending value for precipitation and incremental value for precipitation.

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Microsoft Visual Studio Debug Console
Enter starting roof area in meter square (must be positive): 200
Enter ending roof area in meter square (must be positive): 2000
Enter incremental value in roof area in meter square (must be positive): 300
Enter starting value for precipitation in mm (must be positive): 20
Enter ending value for precipitation in mm (must be positive): 100
Enter incremental value for precipitation value in mm (must be positive): 10
  20.00    30.00    40.00    50.00    60.00    70.00    80.00    90.00   100.00
200.00  4000.00  6000.00  8000.00 10000.00 12000.00 14000.00 16000.00 18000.00 20000.00
500.00 10000.00 15000.00 20000.00 25000.00 30000.00 35000.00 40000.00 45000.00 50000.00
800.00 16000.00 24000.00 32000.00 40000.00 48000.00 56000.00 64000.00 72000.00 80000.00
1100.00 22000.00 33000.00 44000.00 55000.00 66000.00 77000.00 88000.00 99000.00 110000.00
1400.00 28000.00 42000.00 56000.00 70000.00 84000.00 98000.00 112000.00 126000.00 140000.00
1700.00 34000.00 51000.00 68000.00 85000.00 102000.00 119000.00 136000.00 153000.00 170000.00
2000.00 40000.00 60000.00 80000.00 100000.00 120000.00 140000.00 160000.00 180000.00 200000.00
C:\Users\CHOO\Desktop\TSD\Assignment 2\TSD_Assignment2\Debug\TSD_Assignment2.exe (process 14988) exited with code 0.
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the console when debugging stops.
Press any key to close this window . . .

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Figure (3): Screenshot above showing user enter the third set of input values for starting roof area, ending roof area, incremental value for roof area, starting value for precipitation, ending value for precipitation and incremental value for precipitation.