# **Sim City Land Value Calculator Version 1: Read and display land values**

In this version, you will read the data from a file and display the land values as a grid.

First, study the format of the data files. The first line of the file contains the number of rows in the grid, and the second line contains the number of columns in the grid. The remaining lines contain the land values in the grid.

## **What to do**

Implement the create\_grid() and display\_grid() function that would firstly create the grid from reading a file then display the grid that we had read.

You must use the following template:

| **def** **create\_grid**(filename: str) -> list[list[int]]:  """  Create a grid of land values from a file  """  *# TODO: Implement this function*  **pass** |
| --- |

| **def** **display\_grid**(grid: list[list[int]]) -> **None**:  """  Display a grid of land values  """  *# TODO: Implement this function*  **pass** |
| --- |

| **def** **main**() -> **None**:  """  Main program.  """  grid = create\_grid("data\_0.txt")  print("Sim City Land Values:")  display\_grid(grid) |
| --- |

## **Hints**

* Outer for loop would iterate through rows while the inner for loop would iterate through columns
* Values are separated in the file by \n (end of line) character
* Study this example, it might help you with your display\_grid() function:

| **>>>** a = "dog" **>>>** b = "cat" **>>>** c = "mouse" **>>>** print(f"{a:10} {b:10} {c:10}") dog cat mouse |
| --- |

## **Program name**

Save your program as simcity1.py.

## **Demo**

In this demo, data\_1.txt is used.

<https://asciinema.org/a/WpvfVDba3rm4FE7fGLl0SGyVF>

## **Testing**

To make sure your program works correctly, you should test it.

* Run your program with python simcity1.py with data\_0.txt. Your program should print:

| Sim City Land Values:  1 0 3 4   5 6 7 8   9 10 11 12   13 14 15 16 |
| --- |

* Run your program with python simcity1.py with data\_1.txt. Your program should print:

| Sim City Land Values:  76000 0 54000 16000 83000   27000 49000 62000 0 31000   0 48000 53000 22000 19000   71000 37000 63000 41000 0   83000 25000 0 16000 59000 |
| --- |

* Run your program with python simcity1.py with data\_2.txt. Your program should print:

| Sim City Land Values:  94000 64000 30000 0 14000 92000   37000 49000 50000 29000 35000 0   0 88000 85000 96000 60000 22000   13000 44000 73000 0 45000 53000   20000 33000 67000 71000 82000 0   36000 0 62000 55000 44000 75000 |
| --- |

* Run your program with python simcity1.py with data\_3.txt. Your program should print:

| Sim City Land Values:  24000 57000 50000 43000   38000 0 16000 62000   51000 25000 49000 0   0 76000 19000 34000 |
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## **Submitting**

Submit simcity1.py via eClass.

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I. Akhmetov, J. Schaeffer, M. Morris and S. Ahmed, Department of Computing Science, Faculty of Science, University of Alberta (2022).