Laboratory Activity No. 11	
The Grid Manager	
Course Code: CPE103	**Program:** BSCPE
Course Title: Object-Oriented Programming	**Date Performed**: 04-05-25
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1. Objective(s):

This activity aims to familiarize students on how to implement geometry manager

2. Intended Learning Outcomes (ILOs):

The students should be able to:
2.1 Identify the main components in a GUI Application
2.2 Create a simple GUI Application using Grid manager

3. Discussion:

A Graphical User Interface (GUI) application is a program that the user can interact with through graphics (windows, buttons, text fields, checkboxes, images, icons, etc..) such as the Desktop GUI of Windows OS by using a mouse and keyboard unlike with a Command-line program or Terminal program that support keyboard inputs only.

Geometry managers are tools used to place widgets on the screen. There are three geometry managers available in tkinter—grid, pack, and place. The place manager provides complete control in the positioning of widgets, but is complicated to program

Grids

- A grid is an imaginary rectangle containing horizontal and vertical lines that subdivide it into rectangles called cells. The first row of cells is referred to as row 0, the second row is referred to as row1, and so on. Similarly, the first column of cells is referred to as column 0, the second column of cells is referred to as column 1, and so on. Each cell is identified by its row and column numbers.

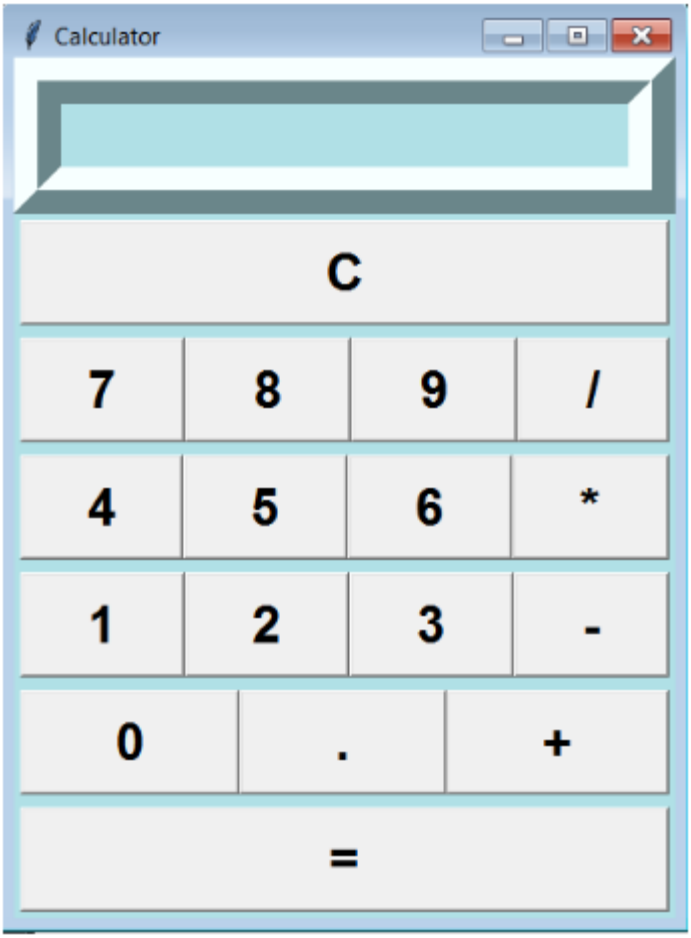
4. Materials and Equipment:

Desktop Computer with Pycharm
Windows Operating System

5. Procedure:

General Instruction:

1. Redesign the interface of the standard calculator using grid ( ) method:



2. Run the program and observe the output when the button is clicked.

LINK: CPE-103-OOP-1-A/Supplementary11.py at main · sebastianacebedo/CPE-103-OOP-1-A

6. Supplementary Activity:

1. Make a calculator program that can compute perform the Arithmetic operations as well as exponential operation, sin, cosine math functions as well clearing using the C button and/or clear from a menu bar.
2. Use Geometry manager grid()

3. Use bind () or command parameter in associating event to callback a function.

LINK: CPE-103-OOP-1-A/Activity11.py at main · sebastianacebedo/CPE-103-OOP-1-A

Questions

1. How do you configure rows and columns in PyCharm when using Tkinter's grid() manager?
   By using methods such as .columnconfigure() and .rowconfigure() to properly adjust how preferably you want column or row should take.

2. Why do widgets sometimes disappear when using grid() in PyCharm, and how can you fix it?
   Sometimes, It disappear because you don't properly adjust the column or row or maybe it exceeds beyond the geometry of your given window. To fix this, firstly, make sure that you are correctly placing rows and columns. Additionally, make sure that it doesn't exceed in the windows.

3. How can message boxes be used to provide a better User Experience or how can message boxes be used to make a GUI Application more user-friendly? How can you align widgets across multiple frames using grid() in PyCharm?
   Message box are helpful especially for the people who are not particularly used to fill out forms. It's also beneficial because you can see easily the form that you've missed.Moreover, to align widgets across multiple frames using grid(), make sure you properly configure the same grid structure.

7. Conclusion:

In Conclusion, GUI enhances with user by giving visual elements like buttons and text, textbox. In Tkinter, geometry manager like grid, pack, place help position these visual elements on the screen. Like I used in the activity, the grid is used in layouts like column and rows. Overall, understanding and using these geometry managers effectively helps in building intuitive and well organized GUI

8. Assessment Rubric: