Name: \_\_\_\_\_\_\_\_

**Course Culminating Assignment**

For your culminating assignment, you will be incorporating all the techniques learned in the course over the semester. You will be creating a computer game level using PyGame. You must:

* Include an OOP approach
  + Have User Classes
  + A Scoring element (4U only)
  + Collision detection
  + Sprite groups
  + Music and SFX (4U only)
* Save user results to a CSV
* Use Jupyter Notebooks and Pandas to analyze some piece from the CSV (4C – can create mock data if they prefer)
  + Proper data frame organization
  + More than one data Series within the data frame
  + Do some sorting OR filtering OR groupby within the data frame
  + Display a relevant data piece that has been analyzed in some way
  + Visualize the Data (4U only)

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| --- | --- | --- | --- | --- |
|  | Level 1 | Level 2 | Level 3 | Level 4 |
| K/U | Student program does not work, does not meet all required instructions | Student program is functional, and meets some of the required instructions | Student program is functional, and meets all of the required instructions | Student program is functional, and meets all of the required instructions with proficiency |
| App | Student does not apply conventions from class to create solution | Student applies conventions from class with some effectiveness when creating solution | Student applies conventions from class with considerable effectiveness when creating solution | Student applies conventions from class with a high degree of effectiveness when creating solution |
| T/I | Student does not use coding language in the appropriate location, or for the correct intention. | Students demonstrates some forethought in their use of coding decisions | Students demonstrates considerable forethought in their use of coding decisions | Students demonstrates a concrete understanding in their use of coding decisions |
| Comm | Program does not communicate intention well. Student does not use comments. | Program communicates its intention to user with some effectiveness. Student uses some comments. | Program communicates its intention to user with considerable effectiveness. Student uses comments. | Program communicates its intention to user with a high degree of effectiveness. Student uses comments. |