

Project 3 - Classification and regression

Problem 1: Run the classification notebook (2 points)

From the class website

https://www.cs.ucf.edu/~lboloni/Teaching/CAP1931_Spring2026/index.html

Download the classification notebook from the January 26 lecture. Using one of the environments you used for the Project 2, run the notebook.

Tip: probably the best idea is to click on the button “Clear All Outputs” first and then run each cells separately.

What to submit: What to submit: The executed version of the modified notebook (do not clear the outputs). Put it in a folder Problem-1.

Problem 2: Modify the classification notebook (3 points)

Modify the classification notebook in the following way:

- In the “create dataset for training” cell add another 6 houses to the X and y arrays. The objective should be to model the fact that every house over 5000 sq ft and over \$1M is a mansion.
- In the “how do we use this to make predictions” cell, add 5 examples of various houses that test out whether the system learned the criteria above.
- After this cell, add a markdown cell. There, describe in one paragraph paragraph the choices you made for the training data and test data. Were the results as expected? If not, speculate about the reasons why.

What to submit: The executed version of the modified notebook (do not clear the outputs). Put it in a folder Problem-2.

Problem 3: Run the regression notebook (2 points)

Download the regression notebook from the January 28 lecture. Using one of the environments you used for the Project 2, run the notebook.

Problem 4: Modify the regression notebook (3 points + 2 bonus points)

Modify the regression notebook in the following way:

- Choose an area of the country where the house prices are different from the Orlando area - these can be places which are more expensive or cheaper.
- In the “Create the training data” cell, add additional five houses that are representative for the new area.
- After this cell, add a markdown cell, explaining the area your chose. Why do you think that the prices are different from the Orlando area in this area?

- Run the notebook with the resulting dataset.
- After the last cell of the notebook, add a cell that explains your results.
- For a 2 point bonus: if you are not satisfied with the results, explain why, and what techniques you would use to improve the results.

How to use chatbots

For this assignment, you can use chatbots to help you in the computer configuration and debugging. For instance, you might ask you chatbot:

Why I am getting an error XXX in vscode?

How do I install Python on a Windows 11 machine and connect it to vscode?

How do I print to pdf in Google Colab?

Alternatively, you can just search for answers on the internet.

What to submit

- For all the problems, submit the executed version of the notebook (do not clear the outputs). Put the notebooks in directories (Problem-1, Problem-2, Problem-3, Problem-4).