**Python\_Lesson5: Python Programming**

Please don't forget to submit your feedback after the class. This helps a lot in increasing effectiveness of the course. Use the following link to submit your feedback: https://docs.google.com/forms/d/1AkrJ-\_5ZHozJf\_mCg92hsXAEMYKzo3CaM4ebm0GJSmU/edit?ts=5b74fe0e

**Lesson Overview:**

In this lesson we will review regression techniques

Regression techniques

1. Linear Regression
2. Multiple Regression

**Use Case Description:**

Multiple Linear Regression

**Programming elements:**

Linear Regression and Data Analysis

**Source Code:**

<https://umkc.box.com/s/0v0tsif4b8gm9fecx4xhwvfs2xqbgfzw>

**In class programming:**

1.Delete all the outlier data for the GarageArea field **(for the same data set in the use case: House Prices)**.

\* for this task you need to plot GaurageArea field and SalePrice in scatter plot, then check which numbers are anomalies.

2. Create Multiple Regression for the “**wine quality**” dataset. In this data set “quality” is the target label.

Evaluate the model using RMSE and R2 score.

<https://umkc.box.com/s/ohp4ys6b1gv1qa8wxh7infnzw13vjeso>

**\*\*** You need to delete the null values in the data set

**\*\*** You need to find the top 3 most correlated features to the target label(quality)

**ICP Submission Guidelines (for In Class students):**

1. ICP Submission is in pairs of two students.

2. Once completed, must be presented to TA or Instructor before the completion of the class

3. Submission after class is considered as a late submission. (Check the late submission policy in the syllabus)

4. ICP Code with brief explanation should be pushed to GitHub. Submit GitHub link through the Feedback Form: https://docs.google.com/forms/d/1AkrJ-\_5ZHozJf\_mCg92hsXAEMYKzo3CaM4ebm0GJSmU/edit?ts=5b74fe0e

**Online Submission Guidelines (for Online students):**

1. Submit your source code and documentation to GitHub and represent the work through wiki page properly (submit your screenshots as well. The screenshot should have both the code and the output)

2. Comment your code appropriately

3. Video Submission (2 – 3 min video showing the demo of the ICP, with brief voice over on the code explanation)

4. Submission after class is considered as a late submission. (Check the late submission policy in the syllabus)

5. Use the following Google link to submit your ICP # (GitHub wiki page link for ICP #): https://docs.google.com/forms/d/1AkrJ-\_5ZHozJf\_mCg92hsXAEMYKzo3CaM4ebm0GJSmU/edit?ts=5b74fe0e

**Evaluation Criteria:**

1. Completeness of Features

2. Code Quality (<https://en.wikipedia.org/wiki/Best_coding_practices>)

3. Time

4. Feedback Submission

**Note:** *Cheating, plagiarism, disruptive behavior and other forms of unacceptable conduct are subject to strong sanctions in accordance with university policy. See detailed description of university policy at the following URL:* [*https://catalog.umkc.edu/special-notices/academic-honesty/*](https://catalog.umkc.edu/special-notices/academic-honesty/)