## 3.1 Assignment 1: Linear Regression Model Analysis

- **Gender Bias Analyis**
  - Excellent understanding and interpretation: 20 points
  - Good understanding but minor errors: 12 points
  - Partial understanding with major errors: 5 points
  - Poor understanding or incomplete: 0 points
- **Model Conversion**
  - Correct conversion: 10 points
  - Partially correct conversion: 5 points
  - Incorrect conversion or no answer: 0 points

**Total: 30 points**

## 3.2 Assignment 2: Python Experience

- **Data Generation**
  - Correctly generated data: 15 points
  - Partially correct: 10 points
  - Incorrect or incomplete: 0 points
- **Scatterplot**
  - Accurate plot and insightful commentary: 10 points
  - Accurate plot but lacking commentary: 5 points
  - Incorrect or incomplete: 0 points
- **Linear Regression Model**
  - Accurate model fitting, insightful commentary, and $R^2$ computation: 20 points

  - Minor errors in model or commentary: 15 points
  - Major errors or incomplete: 5 points

- **Polynomial Regression Model**
  - Accurate model fitting, insightful commentary, and $R^2$ computation: 25 points
  - Minor errors in model or commentary: 20 points
  - Major errors or incomplete: 5 points

**Total: 70 points**

**Overall Total Points: 100 points**

# Appendix 2: Code Evaluation Rubrics (0-100 points)

- Code organization: 10 points
- Proper commenting and documentation: 30 points
- Proper use of Python libraries and functions: 20 points
- Correctness of the implemented logic: 20 points
- Efficiency of code: 20 points

First question was really interesting for me because I usually did coding for linear regression and did not do assignments on it by hand. Which really helped me to understand the concept better. This was the first model tree I made.
For the second part it was less new because I have done projects with linear regression and Lasso in general in Jupyter Notebook. So that wasn't really new but the polynomial part was

newer for me. This was the first time I used the PolynomialFeatures function. I knew that first linear regression is not gonna be useful alone for polynomials or data with higher degrees, but I never did an assignment or project on it, and i think that was really useful, usually we only work on linear data so I liked working with different data and doing the steps to actually understand why one method work better or worse in different situations. For lasso, although i worked with it before at the start i really didn't fully understand why regularization is making it so bad so i did some research and now i know more about regularization and when to use it.