

## **Software Requirements Specification (SRS)**

### **Project Title: Polynomial Regression Line Solver and Drawer**

#### **1. Application Functionality**

- A regression line solver and grapher
  - When given the points as a text file (with the first number as the polynomial level of the graph and with one point on each new line) the program will take in all the numbers
  - The program will use the numbers given in text file to solve for a regression line
  - The program will use the regression line and make new lines and draw them in a Java window

#### **2. User Requirements**

- The user provides a .txt file in a required format
  - The first line of the text file contains an integer specifying the degree of the polynomial regression (1 for linear, 2 for quadratic...)
  - Each new line after that contains a coordinate pair representing a data point (like "3,2" or "5,1").

#### **3. System Requirements**

- Java Development Kit (JDK) 21 or higher
  - (21 is what we used, but JDK 17 works too)
- Java Swing or JavaFX for GUI
- Efficient Java Matrix Library (EJML)
- Hardware Requirements:
  - Any system capable of running Java applications
  - Minimum 512 MB RAM
  - Display resolution of at least 1024x768