Slide-1: Assalamualikum good morning everyone. Here is my software project lab-1. My project is Equation Solver.

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Slide-2: Motivation behind the project. The equation is a part of our educational life. We need to solve equations in every stage of our life. For a human being, it is very tough to solve large equations. For this, I want to make a project that solves some particular types of equations.

Slide-3: Overview of the project. This project consists of three parts. First, the project solves linear algebra. It takes input some linear equations and solving the equations. Secondly, solving linear programming. It takes linear equations and a linear function to find maximum and minimum value and also print critical points. And lastly, solving the polynomial equation.

Slide-4:

* Find a maximum and minimum value for linear programming and also find critical points.
* Solve the polynomial equation and try to find all real and rational roots.
* Users can Input the whole equation or input coefficient of the equation.
* Input linear equation and it will find the solution if exists.
* Also, detect if infinitely many solutions or no solution exists.

Slide-5:

* **No need to arrange equations in standard form. Users can input equations in any format.**
* **No need to count the number of variables. Program automatic count number of variables.**
* **It can detect is there no solution or infinitely many solutions.**
* **No need to input a fixed variable name. Users can input any type of variable name.**

**Slide-6**:

* Input any kind of linear equation and it will give solutions.
* Users also can input the coefficient of equations.
* Detect if there are infinitely many solutions or no solution exists.
* Find the maximum and minimum value of linear programming using the simplex method.

Slide-7:

Here is the two output of the project. One is for linear algebra and another is the output of linear programming.

Slide-8: **What are the challenges?**

In the equation, there are numbers and variables. First, it needs to separate variable and number and organize it in a matrix with perfect matching.

Slide-9:

* Graphical view of linear programming (only 2D equation). More than two dimensions are not possible for the draw for me.
* Try to find all real and rational solutions of the polynomial equation. Also, try to find an imaginary solution.
* Create short equations when there are infinitely many solutions.
* Use the Big M method for linear programming. We use this method when there is an equal sign in linear programming.
* Save history for future use. We save this in a file.