Implementation Summary

DLModel Class: This class represents the model used for approximating the function. It has methods for getting predictions, calculating loss, saving, and loading the model.

Data Loading and Preprocessing: The script loads cricket match data from a CSV file and performs some data preprocessing steps, such as removing rows with missing values, filtering specific columns, and excluding rows with errors in data.

Fit Function: The fit_function computes predictions based on the given parameters (Z0 values and L value) for each value of 'Wickets.in.Hand' and 'Over'.

Training the Model: The train_model function optimizes the model's parameters (Z0 values and L) using the provided data. It utilizes the opt.minimize function from SciPy to perform the optimization with constraints and bounds.

I have used 'SLSQP' in the opt.minimize function. 'SLSQP' stands for Sequential Least Squares Quadratic Programming, and it's one of the optimization methods provided by SciPy for constrained optimization problems.

SLSQP can handle both equality constraints (constraints of the form $g(x) = 0$) and inequality constraints (constraints of the form $h(x) >= 0$).

Plotting Function: The plot function generates a plot showing predicted scores against the number of overs. It uses the trained model to create predictions for various values of 'Wickets.in.Hand'.

Results

The plot with 10 curves

Predicted Scores vs Number of Overs
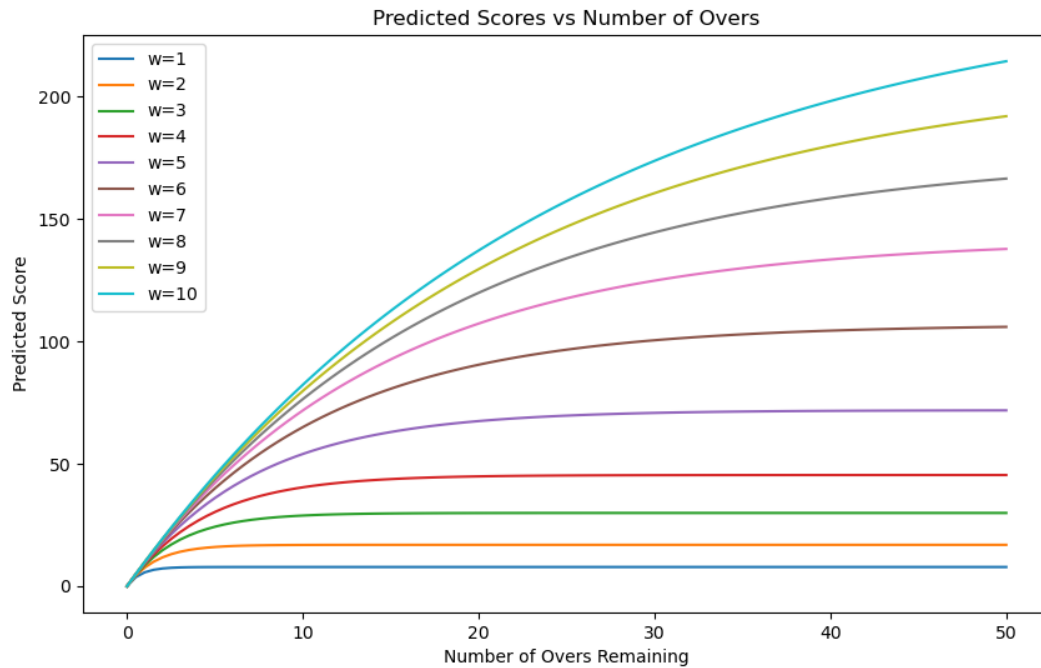
Average Loss

Normalized Square Error
1.15

Value of model Parameters

Z0 Values									
Z0(1)	**Z0(2)**	**Z0(3)**	**Z0(4)**	**Z0(5)**	**Z0(6)**	**Z0(7)**	**Z0(8)**	**Z0(9)**	**Z0(10)**
7.85	16.9	29.9	45.39	71.85	106.85	141.85	176.85	211.86	246.85

L Value
9.99