# Assignment 1: Duckworth – Lewis Method

Rajesh Berepalli,

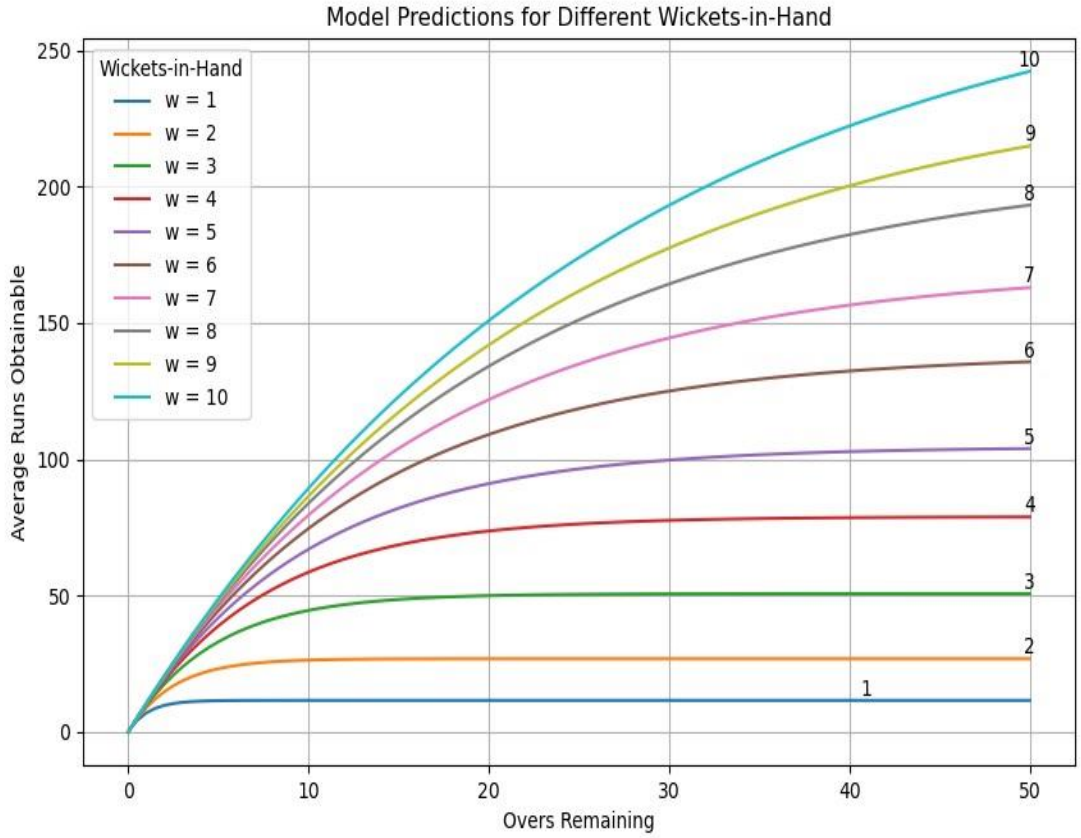
MTech S.P.,

SR No: 21343.

Data Preprocessing is used to extract required features (Overs Remaining and Wickets in Hand) and True Labels (Runs Remaining Column), I added new row to each match at the Beginning with Over = 0, which represents u = 50 i.e. 50 overs remaining. I kept match Id, Date, Innings Columns for future use and removed remaining unnecessary columns.

The 11 Parameters (Zo(1), Zo(2),…,Zo(10), and L), Normalized squared error and 10 Curves are Shown Below:

```
Z_0 Parameters:
Z_0(1): 11.6478
Z_0(2): 26.9063
Z_0(3): 50.7833
Z_0(4): 78.9876
Z_0(5): 104.5998
Z_0(6): 138.7216
Z_0(7): 170.3334
Z_0(8): 209.4877
Z_0(9): 241.0632
Z_0(10): 286.4423
L: 10.7136
Normalized Mean Square Error = 1617.498052813736
```




The Above Graph and Parameters are Compatible with Graphs Shown in the Class, the theory behind this is discussed in Class.

The only thing that is worth discussing is Normalized squared error, we obtained is 1618, Do you think that is quite unintuitive?

The Answer is No. Why?

The Reason behind high Normalized squared error is we are approximating all possible scores with one average value that reduces error as minimum as possible. For example, in a 50 overs match with 10 wickets in hand, our model predicts that the possible score is approximately 242 runs, but in reality most probably that may vary from 180 to 320.The Normalized squared error of 1618 crudely means, on an average we differ the actual score by sqrt(1618) = 40 runs (approximately).