CHAPTER 5
IMPLEMENTATION AND TESTING

5.1 Implementation

The stages of implementation of this project include:

1. Manage Data

Sales data obtained from the company are managed in the form of arrays with procedural methods then displayed in the form of sales tables.

Data Penjualan Harian

Show 10 entries Search:

No	Tanggal	Nama	Quantity
1	2018-05-12	Ketan Gajah Bintang	60
2	2018-05-12	Poles B	32
3	2018-05-12	Lele Dlanggu	60
4	2018-05-14	Poles A	50
5	2018-05-15	Poles B	50
6	2018-05-16	Poles A	80
7	2018-05-16	Poles B	50
8	2018-05-16	Walet Pink	40
9	2018-05-18	Poles A	100
10	2018-05-18	Poles B	40

Illustration 5.1: Sales Data

Illustration 5.1 shows an example of sales data from May 2019.

2. Sales Data Classification

Data classification is based on the same sales month and the same product name which is then summarized into monthly sales data.

Tabel Penjualan Bulanan

Show 10 entries Search:

No	Date	Product	Qty
1	2018-05	Ketan Gajah Bintang	112
2	2018-05	Poles B	287
3	2018-05	Lele Dlanggu	313
4	2018-05	Poles A	567
5	2018-05	Walet Pink	80
6	2018-05	Pandan Wangi	51
7	2018-05	Walet Biasa	80
8	2018-05	Broken	60
9	2018-05	Ketan Biasa	162
10	2018-06	Walet Pink	186

Illustration 5.2: Month Sales

Illustration 5.2 describes a summary of sales that occurred in April and May 2018.

3. Grouping Data

Data grouping is done by sorting the name of the product with the same first name from the monthly sales table which is then stored in the array.

Grouping Table

Show 10 entries Search:

No	Date	Product	Quantity
1	2018-05	Ketan Gajah Bintang	112
2	2018-06	Ketan Gajah Bintang	212
3	2018-07	Ketan Gajah Bintang	105
4	2018-08	Ketan Gajah Bintang	343
5	2018-09	Ketan Gajah Bintang	267
6	2018-10	Ketan Gajah Bintang	492
7	2018-11	Ketan Gajah Bintang	328
8	2018-12	Ketan Gajah Bintang	210
9	2019-01	Ketan Gajah Bintang	221
10	2019-02	Ketan Gajah Bintang	249

Illustration 5.3: Grouping Data

Illustration 5.3 displays a data grouping table that has been done.

5.2 Testing

At this stage, we will discuss the simulation of how the program works.

Table Weighted Moving Average

Show 10 entries Searc

No	Product	Prediksi	Reality	Eror
1	Ketan Gajah Bintang	2586.6727272727	2537	
2	Poles B	216.09090909091	600	
3	Lele Dlanggu	503.94545454545	480	
4	Poles A	430.27272727273	435	
5	Walet Pink	827.38181818182	685	
6	Pandan Wangi	39.527777777778	60	
7	Broken	393.75555555556	64	
8	Ketan Biasa	147	365	
9	Lele Biasa	265.03571428571	20	
10	ikan mas	308.71428571429	90	

Illustration 5.4: Weighted Moving Average Result

Ilustration 5.4 explains how the results of predictions that have been made using training data from May 2018 to February 2019 from the data are carried out the sales prediction calculation process in March 2019 using the Weigthed Moving Average method. After we know the prediction results of each product then compared with real sales data in March 2019, from the difference between the predicted value and the actual data then the error value is calculated using the Mean Absolude Deviation method of each existing product, and produces an error average of 19,008 .

Table Single Moving Average

Show 10 entries Search:

No	Product	Prediksi	Reality	Eror
1	Ketan Gajah Bintang	2156.7	2537	38
2	Poles B	192.8	600	40
3	Lele Dlanggu	469.8	480	1
4	Poles A	444.2	435	0
5	Walet Pink	659.9	685	2
6	Pandan Wangi	39.625	60	2.54
7	Broken	475.22222222222	64	45.6913
8	Ketan Biasa	171.66666666667	365	21.4814
9	Lele Biasa	213	20	27.5714
10	ikan mas	308	90	31.1428

Illustration 5.5: Single Moving Average Result

Ilustration 5.5 shows how the results of predictions that have been carried out using training data from May 2018 to February 2019 from the data calculation process of sales predictions in March 2019 using the Single Moving Average method. After we know the prediction results of each product then compared with real sales data in March 2019, from the difference between the predicted value and actual data then the error value is calculated by using the Mean Absolude Deviation method of each existing product, and produces an error average of 21,162.

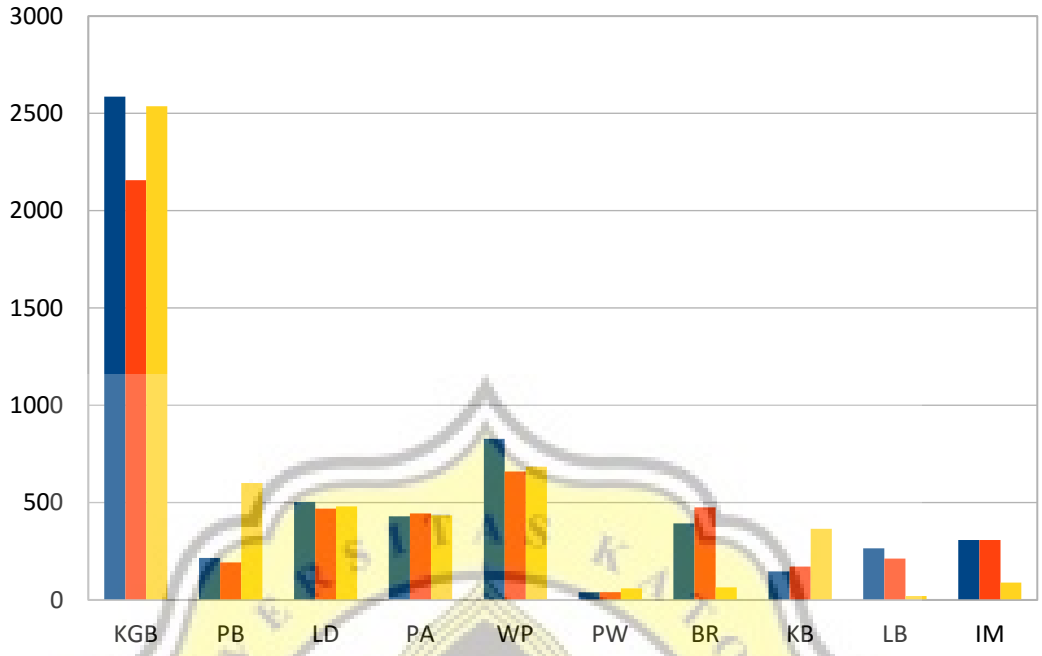


Illustration 5.6: Graph of Result

Illustration 5.6 explains how the comparison between predictive results and the Weigthed Moving Average method and the Moving Average method are compared with the actual data. From this graph we can see that the prediction results with the Weighted Moving Average method are closer to the actual data.

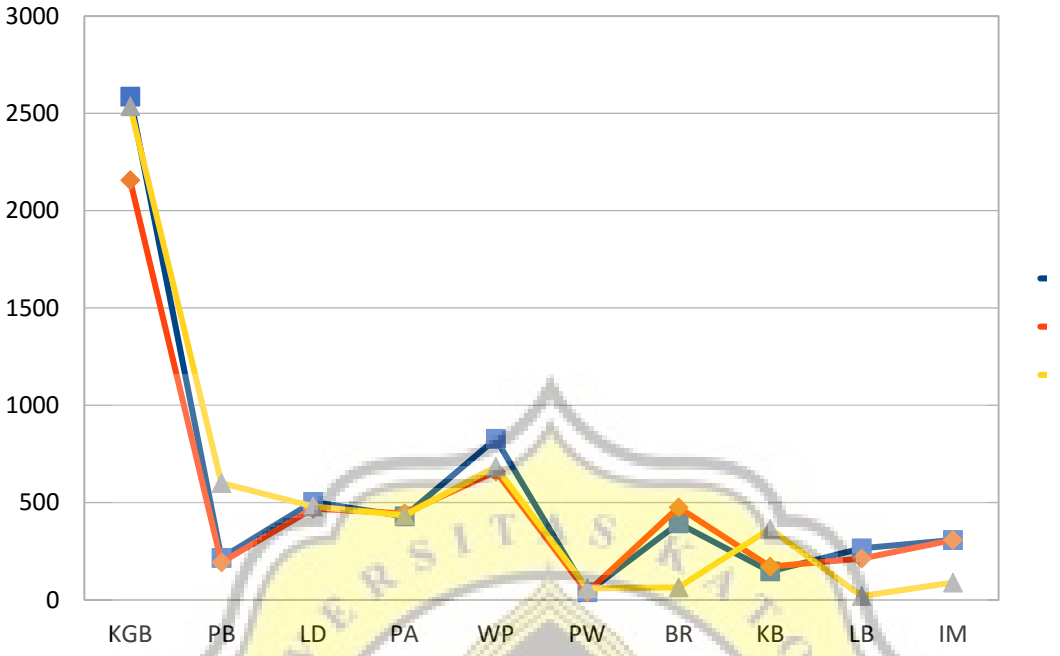
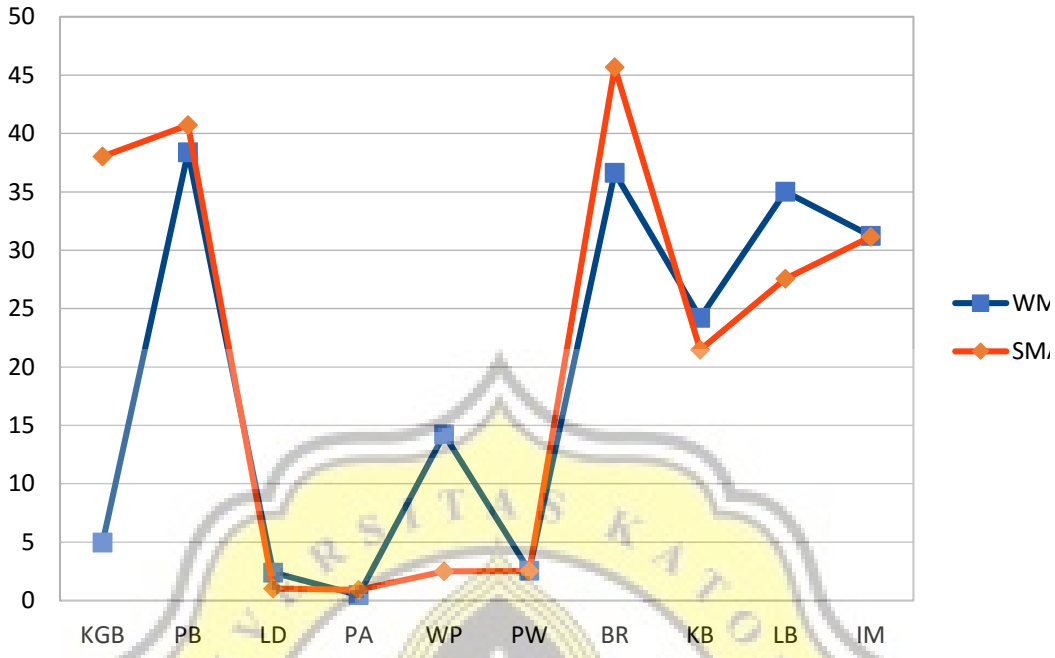


Illustration 5.7: Graph Of Result

Illustration 5.7 explains how the comparison between predictive results and the Weigthed Moving Average method and the Single Moving Average method are compared with the actual data. From this graph we can see the predictions of BR and KB products, the value is more volatile than other products because the amount of training data used greatly influences the outcome of the final prediction.



Ilustration 5.8 shows a comparison of error values of 10 products from the Weighted Moving Average method and the Single Moving Average method. From the graph above we can conclude that the Weighted Moving Average method has an error value that is smaller than the Single Moving Average method.