

CHAPTER 5

IMPLEMENTATION AND TESTING

5.1 Implementation

This program will use data from the trade ministry's website. There are 3 menus in this program, namely "Price Monitoring", "Detail Item", and "About". Price monitoring is used to view the overall data on the trade ministry's website along with its statistical calculations. Detailed items are used to view prices in detail by displaying statistical and graphical calculations. About is used to view application information.

There are three inputs in the Details Item screen in the file DetailActivity.java. First, input the year by selecting the year drop down menu. Second, input the month by selecting the month drop down menu. Third, input the items by selecting the item list drop down menu. After selecting the year, month and item click get data button. The data will be displayed in textview and displayed in a chart.

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try {
    Document doc = Jsoup.connect(URL).get();
    Element table = doc.select("table").get(0);
    Elements rows = table.select("tr");
    Element row_tanggal = rows.get(1);
    Elements tgl = row_tanggal.select("th");
    int[] tanggal = new int[tgl.size()];
    for (int j=0; j<tgl.size(); j++){
        String getTgl=tgl.get(j).text();
        tanggal[j]=Integer.parseInt(getTgl);
    }
}
```

Illustration 5.1: Connect and Get Table

The first step of the function from line 72 is connected to the ministry of Trade's website using URL parameter. In code line 74, if the application connects successfully data retrieved from the website as HTML document in doc variable. Then from line 76, the application will select the specific table of basic

commodities data from HTML document saved in doc variable. After select table, code line 79-86 used to retrieved dates value from the table then saved to tanggal variable.

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    LinkedListImpl listData = new LinkedListImpl();
    for(int i=2; i<rows.size(); i++){
        Element row = rows.get(i);
        Elements cols = row.select("td");
        String nama = cols.get(1).text();
        int numOfHarga= cols.size()-3;
        float[] arrHarga = new float[numOfHarga];
        int idx=0;
        for (int k=3; k<cols.size(); k++){
            String harga = cols.get(k).text();
            String harga_rep = harga.replaceAll("[^a-zA-Z0-9]","");
            float c = 0;
            if (!harga_rep.equals("")){
                c = Float.parseFloat(harga_rep);
            }else {
                c = 0;
            }
            arrHarga[idx]=c;
            idx++;
        }
        node node = new node(nama, arrHarga, tanggal);
        listData.addLast(node);
    }
}

```

Illustration 5.2: Insert Data to Linked List

The code above used to proceed value from the table into linked list. First, in code line 109, create new linked list by calling new LinkedListImpl.java. Then in code line 112-129, choose each row and column to get item name and prices of the item. In code line 130, create a new node and assign name, prices and dates data. After creating a new node with data insert the node into Linked List list data using code line 131. Insert each data into Linked List list data based on the table row that contains specific basic commodities data until the end of row.

```

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    Statistic stat = new Statistic();
    node pointer = listData.getHead();
    while (pointer != null) {
        builder.append("Name : ").append(pointer.getName()).append("\n");
        builder.append("Period : ").append(period).append("\n");
        builder.append("Prices").append("\n");
        float[] h = pointer.getHarga();
        int[] t = pointer.getTanggal();
    }
}

```

Illustration 5.3: Call Statistic Class and Display Data

Code line 123 used to call statistic class. Data already saved into Linked List. To display data is to access Linked List list data that contain all using get method in code line 125. The code line 127-133 use to display data such as name, period, and prices of the item.

```

147
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154
    builder.append("\n");
    builder.append("Statistics").append("\n");
    float meanVal = stat.mean(h);
    double medVal = stat.median(h);
    float modeVal = stat.mode(h);
    builder.append("Mean      = ").append(meanVal).append("\n");
    builder.append("Median   = ").append(medVal).append("\n");
    builder.append("Mode     = ").append(modeVal).append("\n");

```

Illustration 5.4: Calculate and Display Statistic

The item prices store in variable h, then from code line 149-151 use to calculate mean, median and mode using statistic class method. After calculate then line 152-154 to display the statistic calculation result.

```

203
204
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206
207
    GraphView graph = (GraphView) findViewById(R.id.graph);
    GridLabelRenderer gridlabel = graph.getGridLabelRenderer();
    gridlabel.setHorizontalAxisTitle("Dates : "+periode);
    gridlabel.setVerticalAxisTitle("Prices (Rupiah)");
    graph.addSeries(mSeries1);

```

Illustration 5.5: Display Data as Chart

After display statistic calculation, application display data as a chart. The code in line 203 uses to call graph from the layout. The code in line 207 data in variable values that contain item's prices and dates add in series to the graph.

5.2 Testing

For the test, there will be three examples data.

The first example of the testing using the year 2015, month August and Item name “Tepung Terigu” by selected all drop down. Then, user click "Get Data" to process it. The data displayed is the existing data on the website of the Ministry of Trade with the selected period of the year, month and item name.



Illustration 5.6: First Input Sample

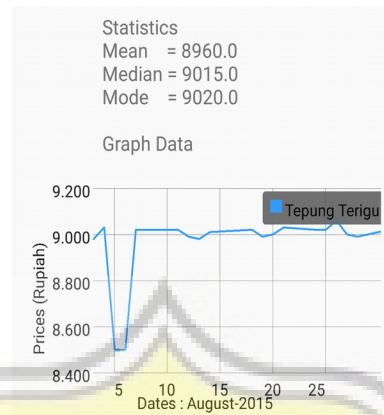


Illustration 5.7: First Output Sample

The data displayed are item name “Tepung Terigu”, period, price and statistical calculation (mean, median, mode). Price data is also displayed in graphical form along with dates and legend.

The second example of the testing using the year 2016, month January and Item name “Gula Pasir” by selected all drop down. Then, user click "Get Data" to process it. The data displayed is the existing data on the website of the Ministry of Trade with the selected period of the year, month and item name.

Illustration 5.8: Second Input Sample

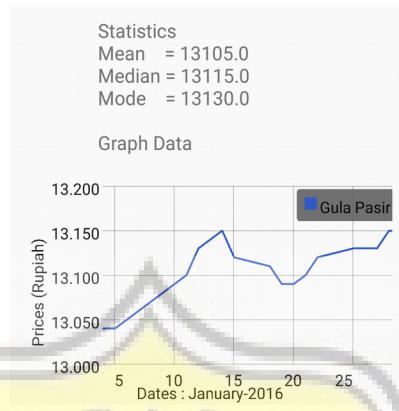


Illustration 5.9: Second Output Sample

The data displayed are item name “Gula Pasir”, period, price and statistical calculation (mean, median, mode). Price data is also displayed in graphical form along with dates and legend.

The third example of the testing using the year 2017, month July and Item name “Minyak Goreng Curah” by selected all drop down. Then, user click "Get Data" to process it. The data displayed is the existing data on the website of the Ministry of Trade with the selected period of the year, month and item name.

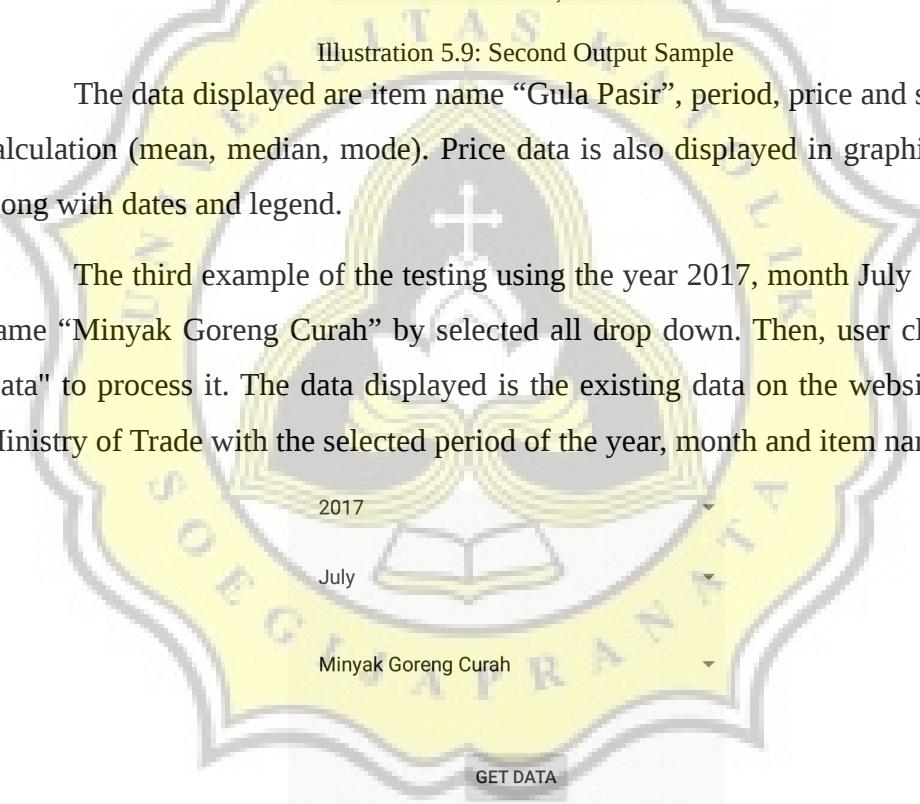


Illustration 5.10: Third Input Sample

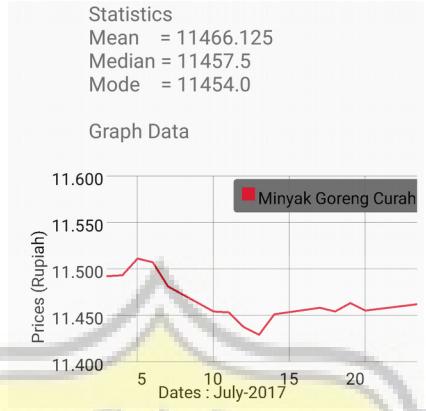


Illustration 5.11: Third Output Sample

The data displayed are item name “Minyak Goreng Curah”, period, price and statistical calculation (mean, median, mode). Price data is also displayed in graphical form along with dates and legend.

Here the results of testing will be served in the form of table testings.

Table 5.1: Testing Table

No	Testing	Explanation
Testing 1	User choose the year 2015, month August, item name: Tepung Terigu	First, the application will connect to the website to get data based on year and month that user has chosen (August 2015), then data insert into Linked List. The application will display data items consist of item name, dates and prices based on item name “Tepung Terigu”. Statistic calculation applied on the prices data then display mean, median and mode value below the prices data. Last, the data also display as a chart that represents item’s dates and prices.
Testing 2	User choose the year 2016, month January, item name: Gula Pasir	First, the application will connect to the website to get data based on year and month that user has chosen (January 2016), the data insert into Linked List. The application will display data items consist of item name, dates and prices based on item name “Gula Pasir”. Statistic calculation applied on the prices data then display mean, median and

		mode value below the prices data. Last, the data also display as a chart that represents item's dates and prices.
Testing 3	User choose the year 2017, month July, item name: Minyak Goreng Curah	First, the application will connect to the website to get data based on year and month that user has chosen (July 2017), then data insert into Linked List. The application will display data items consist of item "Minyak Goreng Curah". Statistic calculation applied on the prices data then display mean, median and mode value below the prices data. Last, the data also display as a chart that represents item's dates and prices.

