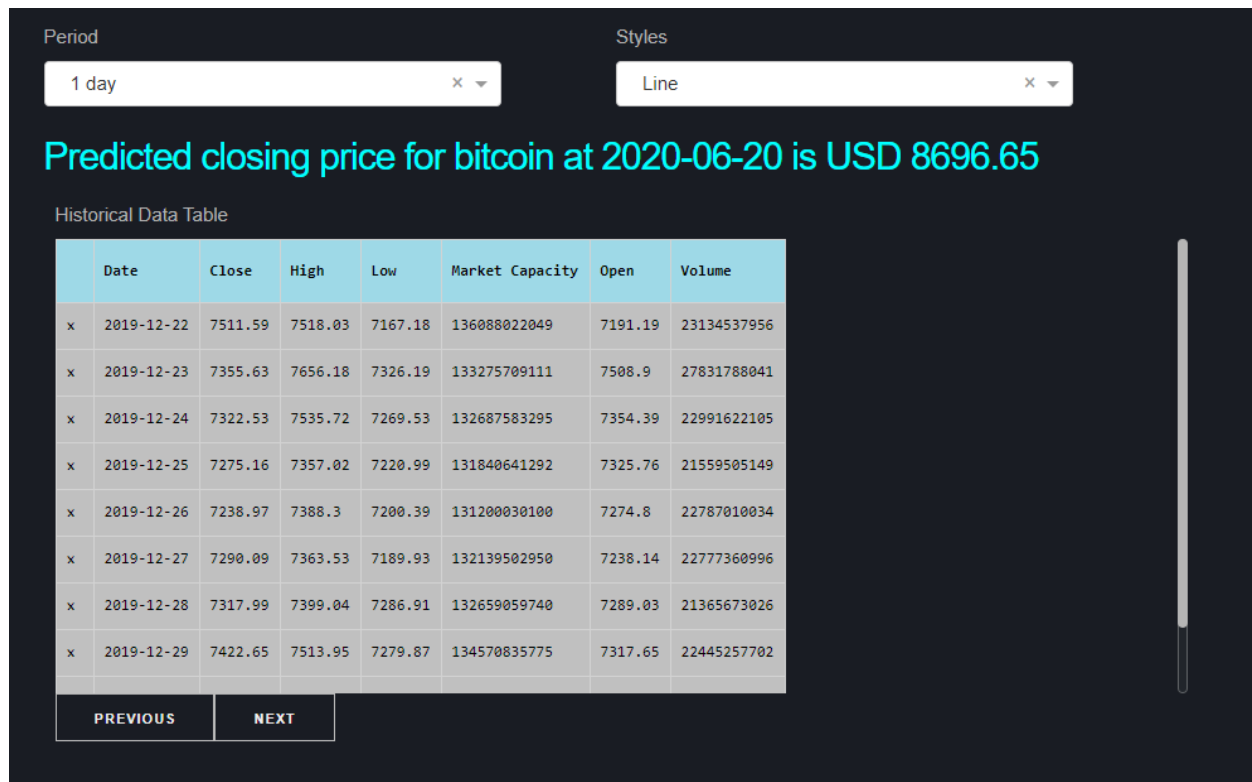**Title: Application of Data Mining in Price Movement of Cryptocurrency**

Team Member:

1. Tan Chang Jung

2. Tan Sia Hong

Github for full milestone: https://github.com/changjung1995/WQD7005_Data_Mining

Github for Milestone 5:

https://github.com/changjung1995/WQD7005_Data_Mining/tree/master/Milestone_Five

Part 1 Web Application

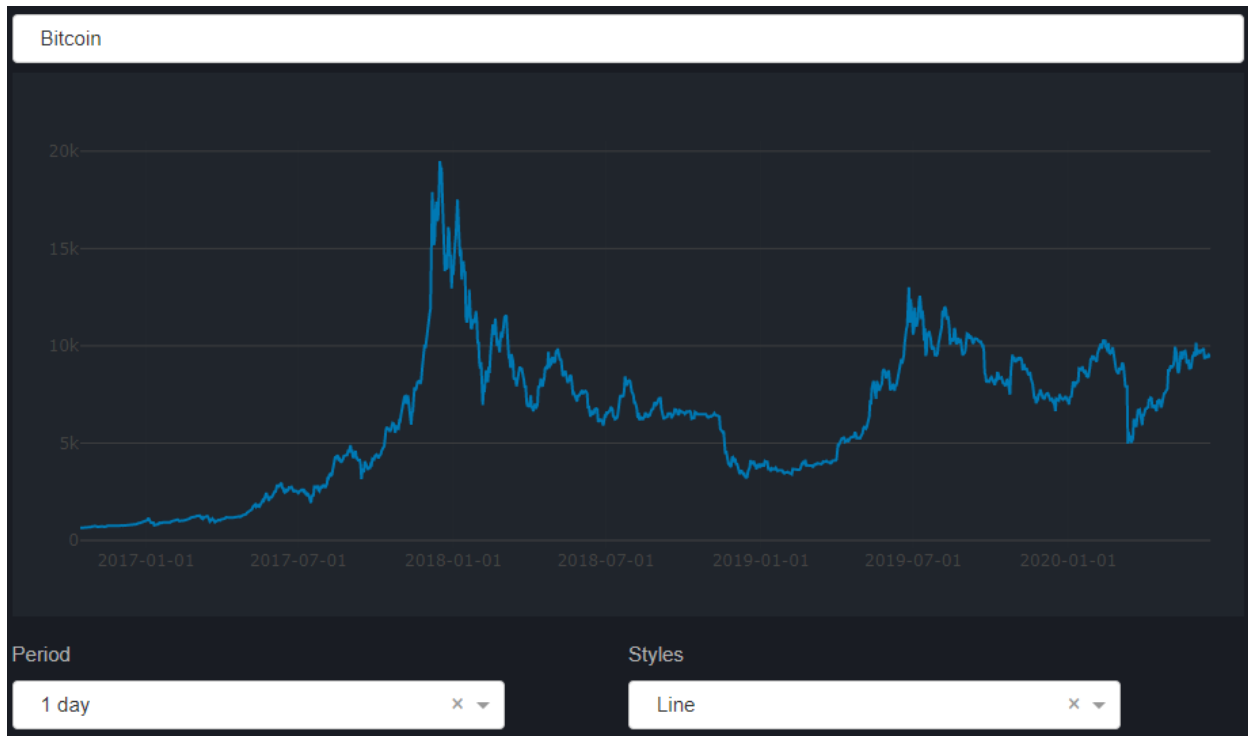In milesone 5, we are required to deploy our works that generated from Milestone 1 to 4, in the web application and mobile application. In the development, we were using python 'Dash'. Dash is an interactive Python framework that developed by Plotly. Dash aimed for building the web applications, it built on top of Flask. It enables us to build the dashboards using pure Python. Furthermore, Dash is an open source, and its application able to run on the web browser.

Period		Styles	
1 day	× ▾	Line	× ▾

Predicted closing price for bitcoin at 2020-06-20 is USD 8696.65

Historical Data Table

	Date	Close	High	Low	Market Capacity	Open	Volume
x	2019-12-22	7511.59	7518.03	7167.18	136088022049	7191.19	23134537956
x	2019-12-23	7355.63	7656.18	7326.19	133275709111	7508.9	27831788041
x	2019-12-24	7322.53	7535.72	7269.53	132687583295	7354.39	22991622105
x	2019-12-25	7275.16	7357.02	7220.99	131840641292	7325.76	21559505149
x	2019-12-26	7238.97	7388.3	7200.39	131200030100	7274.8	22787010034
x	2019-12-27	7290.09	7363.53	7189.93	132139502950	7238.14	22777360996
x	2019-12-28	7317.99	7399.04	7286.91	132659059740	7289.03	21365673026
x	2019-12-29	7422.65	7513.95	7279.87	134570835775	7317.65	22445257702

PREVIOUS   NEXT

Firstly, the historical data for closing, opening, highest, and lowest prices of cryptocurrencies will be crawl by using Beautiful Soup. A function for web scraping is written as function '*web_scraper*' in tests.py, so that the function able to scrape the historical dataset as the cryptocurrency is selected by end-user.

Then, the crawled dataset will be used to plot the line graph and caddlestick.

Other than that, the crawled dataset was used to present in the table data.

Furthermore, the previous 90-days of closing price will be used to predict the one-step ahead closing price by using the trained LSTM model.

In addition, we have used the NewsAPI for crawling the news headline related to cryptocurrencies. When user clicks on the headline, the web will redirect the user to the news webpage.

Part 2 Mobile App

The Android mobile application was created by using Android Studio.

1. Inside the app/src/main/res/layout/activity_main.xml, under the Palette section, we created a WebView. We set the properties of webview with both height and width to be "fill_parent'.

2. Under the 'MainActivity.java', we created a private class for WebView, which is under the public class MainActivity.

```java
public class MainActivity extends AppCompatActivity {
    private WebView myWebView;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        myWebView = (WebView)findViewById(R.id.webView);
        WebSettings webSettings = myWebView.getSettings();
        webSettings.setJavaScriptEnabled(true);
        myWebView.loadUrl("https://cryptofortwp.herokuapp.com/");
        myWebView.setWebViewClient(new WebViewClient());
    }
}
```

The webview will load the url from our web application.

3. Under the AndroidManifest.xml, we added the user permission with internet permission inside the xml.

```xml
<uses-permission android:name="android.permission.INTERNET"></uses-permission>
```

4. To make sure the app is suitable with any screen size, we added the following properties:

```xml
<WebView
    android:id="@+id/webView"
    android:layout_width="413dp"
    android:layout_height="731dp"
    tools:layout_editor_absoluteX="-2dp"
    tools:layout_editor_absoluteY="0dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"/>
</androidx.constraintlayout.widget.ConstraintLayout>
```

The final view of mobile app will looks as below: