



Eureka

Inspiring innovation

DESIGN DOCUMENT VERSION



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INTRODUCTION

Eureka is a startup company made up of young and passionate entrepreneurs from the MIT-AITI-2012 summer program in Ghana. Members jurisdiction include: Stephen Amponsah, the CEO, a computer science and mathematics student of the University of Ghana, Nathaniel Nii-Okwei Yebuah, a computer science and physics student, University of Ghana, Thomas Synaepa-Addison, a computer science student of KNUST, Benedictus Ashigbui, computer engineering student, Regional Maritime University, Bright Sraku, computer science and mathematics, university of Ghana and Yayra Kofi Keteku, electrical/electronic engineering student, Regional Maritime University. Eureka aims at developing innovative mobile software applications to help Ghanaians and users all around the world to solve problems of everyday life.

This document is the design and implementation of MobiStock, an application based on the android platform that gives stock exchange information to its users on the go. This application takes the information from the Ghana Stock Exchange and gives a live feed of the proceedings on the stock market to its user.

PURPOSE OF OUR PROJECT

Until recently, the stock market in Ghana was not very interesting. This was the case because there was virtually no activity on the market as the number of companies on the market was few and their performance on the stock market were almost predictable.

However with the discovery of oil in 2007, investors from all over the world have shown keen interest in Ghana's economy. Some of these companies are now listed on the stock market. The increased numbers of companies and the added economic activities associated with the oil discovery have brought some interesting changes to the stock market environment. More and more Ghanaians are getting into the stock market as investors or as shares owners in the listed companies. Information about activities on the stock exchange market however is not adequately conveyed to interested parties in the country. To have access to stock information in Ghana, one needs to wait for the financial news on the radio or television which is delivered after the usual evening news. Stock indices are sometimes delivered in news papers. The problem with all these traditional means of delivering this information is that there is no real time monitoring on these stock market information and therefore investors would not be able to do real time tracking of their investments. The Ghana Stock Exchange website provides all these information in real time but that will mean one must sit behind his computer all day to do real time monitoring. MobiStock seeks to eliminate all these trouble by providing these information of the stock exchange market on the phone. By implementing this idea, the hassles of getting stock information and other financial related information on the go will be eliminated.

SCOPE OF THE PROJECT

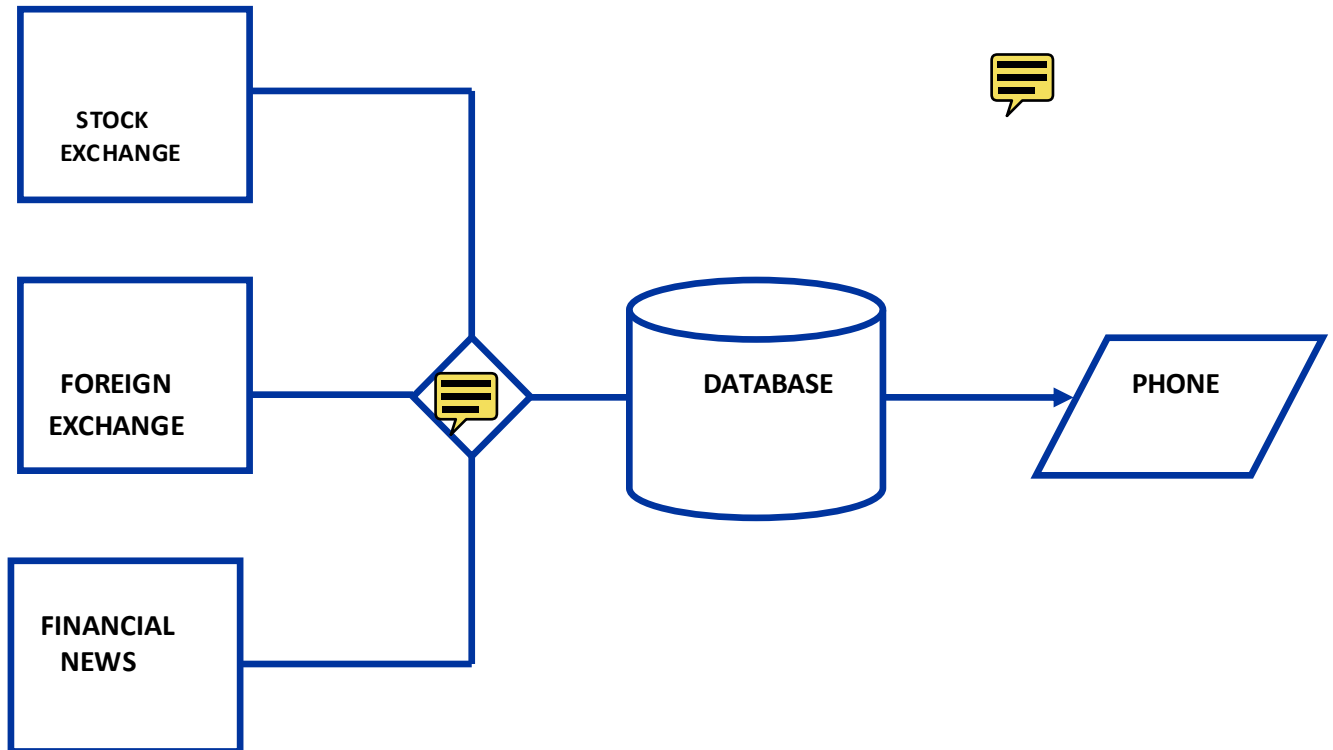
MobiStock is limited to users within the localities of the country Ghana since it is explicitly designed to be used to monitor the Ghana Stock Exchange data. The application will run on the android mobile platform from its initial development stages and then will be expanded to run on other available Smartphone platforms. This application is expected to perform the following tasks:

- Display stock exchange indices on the device
- Provide the current foreign exchange rates (will be added later in the development cycle)

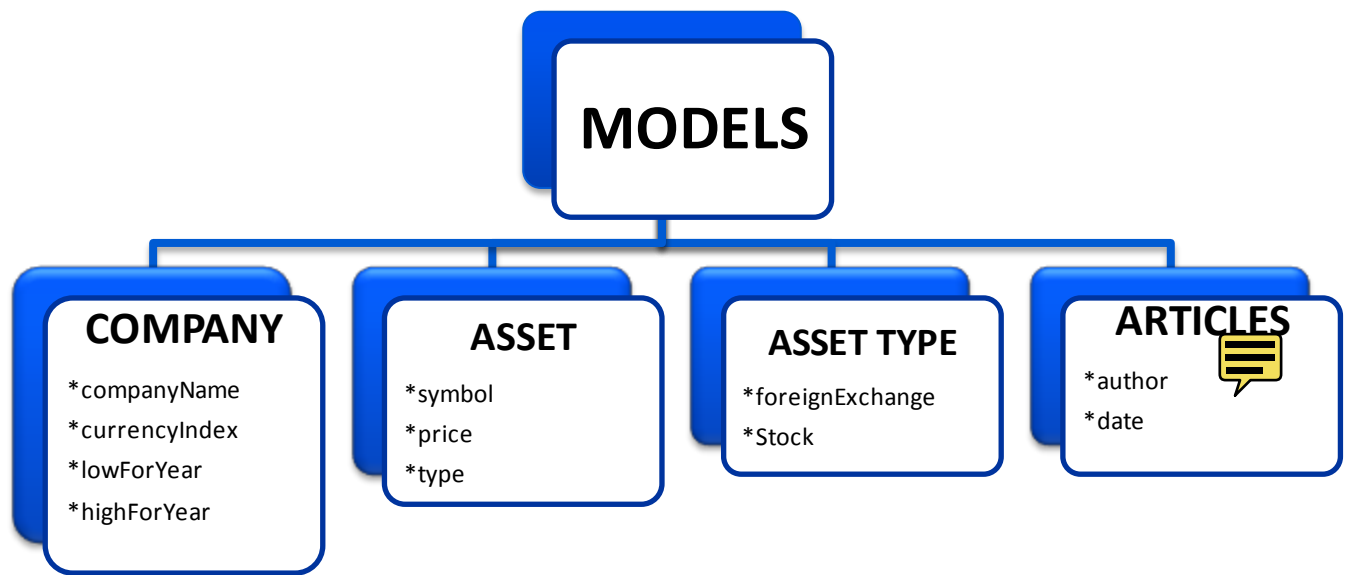
- Provide financial news (will be added later in the development cycle)

MobiStock is targeted to all investors and interested persons in the Ghana Stock Exchange proceedings.

- **StockEx SYSTEM ARCHITECTURE**



- DATABASE AND FILE SPECIFICATION



SYSTEM DESIGN SPECIFICATION

The StockEx system is a multi-tier application that divides the system into three primary layers:

- Data retrieval(Backend)
- Database(Backend)
- Presentation(Frontend)

Data retrieval: This part of the system consists of how we get data into our central database.

For the prototype that would be created, data would be scripted (or API) from various sites (Ghana stock exchange official website).

Data: This is where we have our database and the various relations that exist within it. We have the various models in the database; company model, asset model, asset type model and the news model.

Company model

```
CompanyName = models.charField()
currencyIndex = models.OneToOne(Asset)
lowForYear = models.charField()
highForYear = models.charField()
```

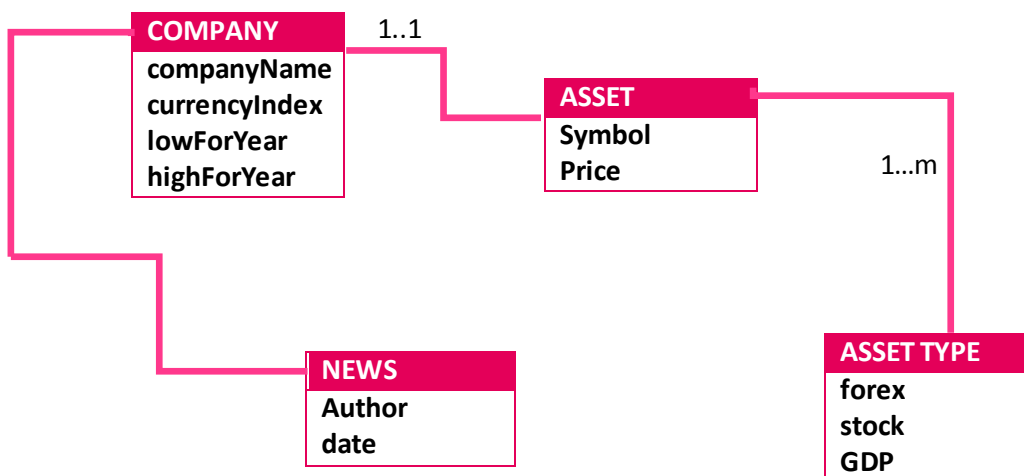
Asset model

```
Symbol = models.charField()
Price = models.charField(Asset_type)
```

Asset_type model

```
Forex = models.charField()
Stock = models.charField()
GDP = models.charField()
```

• DATA FLOW



Presentation:

The visual interface of the system consists of 5 main forms:

- stock form ()
- forex form ()
- news form ()
- settings form()
- exit form()

STOCK FORM: This gives the stock information for companies. It has a search bottom for users to quickly search for their company of interest's stock information.

FOREX FORM: This gives the foreign exchange rates of currencies like the dollar, pound euro etc against the Ghana cedis.

NEWS FORM: This gives financial news on the Gross Domestic price of commodities of particular items in the country on the international market.

SETTINGS FORM: provide features to change the font

EXIT FORM: Close the application.

StockEx USER INTERFACE

