

# **SYSTEM DESIGN DOCUMENT**

## **INTRODUCTION**

### **1.0 Scope**

#### **1.1 Identification**

Nyumbani Stock Traders is a stock vendor involved in the business of trading stock for several companies. They want to put up a running on line portal for users to monitor the daily stock trade going on at their premises. This has seen them outsource the work to Cellulant Ltd, an IT firm that will be responsible for making the system work as required by Nyumbani Stock Traders. Cellulant Ltd is contracted to review the requirements, design the system, develop the system and host the website in their web server.

#### **1.2 System Overview**

Situated along Moi Avenue, Nairobi, Nyumbani stock traders has got quite a number of clients enlisted in their stock trade. The company has been running their daily operations through their core trading system without a website for on-line users. They want on-line users to be able to know of the company stock trading information on any given stock. They wish to show the listed companies and their trading details, their stock prices, their stock values, and gainers and losers on a trading day for users who might be interested in a particular company and would want to know the performance details of that specific company on a given stock to follow.

The stock trading is running from 9:00 am through 3:00 pm on every week day not including the weekends and other non public days. This will ensure that the trading prices will be changing in the bracket of time given and thereafter, the trading prices will remain constant until the next trading day. The website required will provide information on individual, grouped and long term prices. The presentation will also involve an RSS feed implementation for similar data. Some of the data to be presented will involve data analysis.

## **2.0 Project Executive Summary**

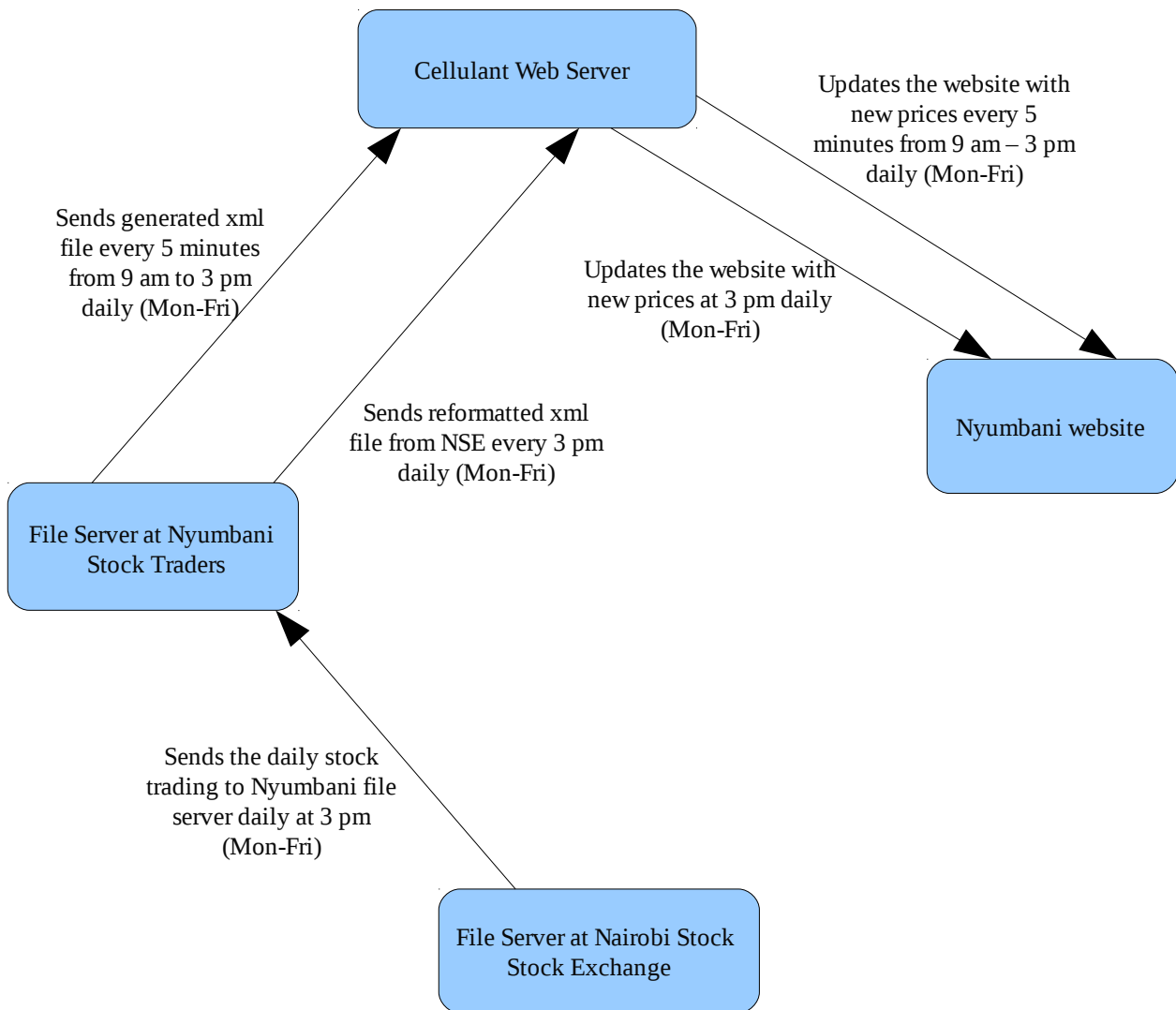
The system is designed, developed, managed and will be maintained by Cellulant Ltd where else the data source will be coming from Nyumbani Stock Traders from time to time as required by the system. The system is developed in such a way that it will be able to process the raw data extracted from Nyumbani Stock Traders and present it to the web users.

Nyumbani Stock Traders will be sending to Cellulant Ltd a set of xml files(.xml) every working day from Monday through Friday excluding weekends and holidays. The first file will be generated after every 5 minutes in each working day from Monday to Friday from 9:00 am till 3:00 pm where the trading is suppose to come to a close and sent to Cellulant Ltd for onward processing. The second file will be sent to Cellulant Ltd at 3:00 pm every weekday from Monday to Friday excluding weekends and holidays since the data is coming from Nairobi Stock Exchange(NSE). This is so because the companies enlisted at Nyumbani Stock traders are also trading at the NSE.

At Cellulant Ltd, the first file will be processed every 5 minutes and update online users of the current trading prices at Nyumbani stock traders. This is supposed to happen in real time. The second file which comes at 3:00 pm will as well be processed by the system and update the website at the close of trading. These prices will remain the same from this time till the following trading day at 9:00 am.

### 3.0 System Flow Diagram.

The following is the flow of operation of the system.



The above diagram shows the flow of data from NSE through Nyumbani Stock Trading to Cellulant webserver. As demonstrated, Nyumbani Stock Traders is sending two xml files to Cellulant Web server at two distinct times.

## **4.0 Components**

### **4.1 Nairobi Stock Exchange File Server**

Is situated at the NSE premises to capture daily stock trading information of several companies that are doing the trading. The companies that are trading at Nyumbani Stock Traders are all enlisted here and are trading as well. That makes it natural for the NSE server to send trading details of these companies to Nyumbani to view their daily trading. This server will be entitled to send a daily stock trading report to the Nyumbani Stock Trading Ltd file server at the designated time of 3:00 pm. This will be happening on a daily basis during the normal working day from Monday to Friday and any other non-public holidays. At the close of the daily trading, the closing trading price will be used till the next trading day which starts at 9:00 am.

### **4.2 Nyumbani Stock Traders Ltd File Server**

Stationed at Nyumbani Stock Trading premises, the file server is to capture the daily trading information of the various companies trading in their core trading system and store inside the databases. From the database tables, an xml is generated every 5 minutes and is sent to Cellulant Ltd for onward processing and update the website. The server is also to receive the second xml file from NSE at 3 o'clock daily from Monday to Friday, reformats it and sends it to Cellulant as the days closing records.

### **4.3 Cellulant Web Server**

The server is to receive xml files from Nyumbani Stock Traders throughout the trading period which starts from 9:00 am to 3:00 pm every weekday from Monday to Friday. Once the server gets these files, it uploads the files into the respective database tables and then update the website with new stock prices for on-line users to follow. This is to happen in a span of every 5 minutes. At the end of the trading period, the server is to receive the days stock prices at 3 o'clock from Nyumbani Stock Traders, process the values and update the portal until the following trading day at 9 o'clock when the generated file from Nyumbani will come.

#### **4.4 Website/On-line Portal**

This is where the system users will be getting the daily stock trading both at the Nairobi Stock Exchange(NSE) and at the Nyumbani Stock traders. The website is tasked with updating users after every 5 minutes of the stock trading at Nyumbani Stock Traders. During the trading hours, the prices will be changing as often until after 3 pm when the prices are expected to remain constant until the following morning at 9 o'clock when the trading starts.