Project Topic:

DESIGN OF SURVEY BEACONS INFORMATION SYSTEM WITH GOOGLE EARTH BEING THE MEDIUM FOR LOCATION BASED GEO-VISUALIZATION; CASE STUDY - GREATER ACCRA REGION OF GHANA (6771)

By

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FIG Congress 2014

Outline

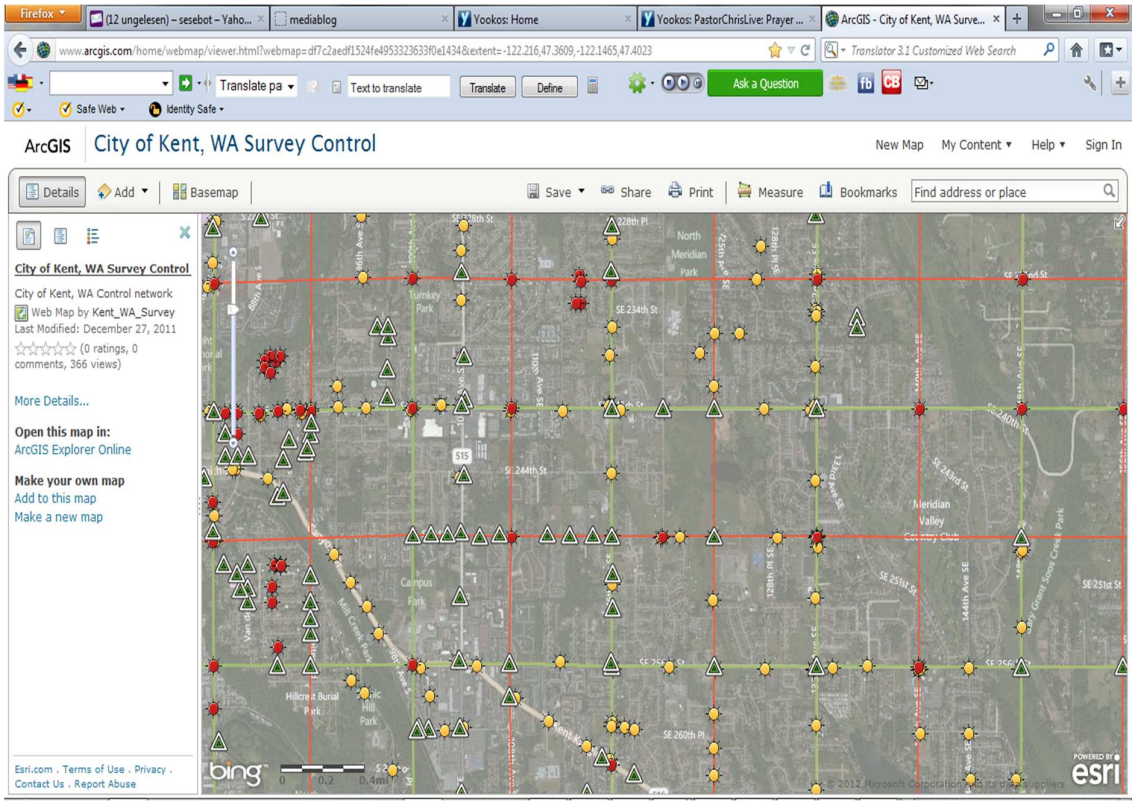
- Introduction
- Description of Project Area
- Methodology
- Final Results

Introduction

The need to develop a comprehensive and accessible geodatabase of survey beacons in Ghana has been driven by the quest for the use of modern and cost effective survey techniques to meet the rising demand for the land related positioning activities in the country.

This project addresses the rising demand for cost-effective and easy access to survey beacons and their coordinates for land surveying purposes and other land related positioning activities.

Motivation

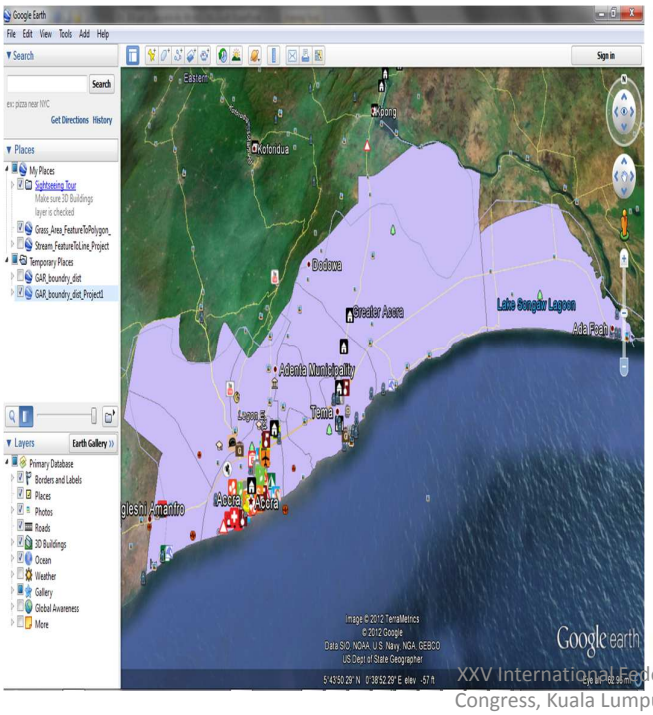


Description Of Project Area

The Greater Accra Region is the smallest of Ghana's 10 administrative regions in terms of area and on Latitude 5.7500° N, Longitude 0.0000° W, occupying a total land surface of 3,245 square kilometres or 1.4 per cent of the total land area of Ghana. In terms of population, however, it is the second most populated region, after the Ashanti Region, with a population of 2,905,726 in 2000, accounting for 15.4 per cent of Ghana's total population. The Greater Accra region was part of the Eastern Region prior to 1982 and Greater Accra region was created from the Eastern Region in 1982 and currently harbors the seat of government in Accra.

Description of Project Area

Project Area in KML



Map of Project Area

Aim

•To provide a database of survey beacons over laying Google map of their spatial location and linking it to a website for easy access and retrieval.
•To publish the beacons onto Google earth for location base analysis.

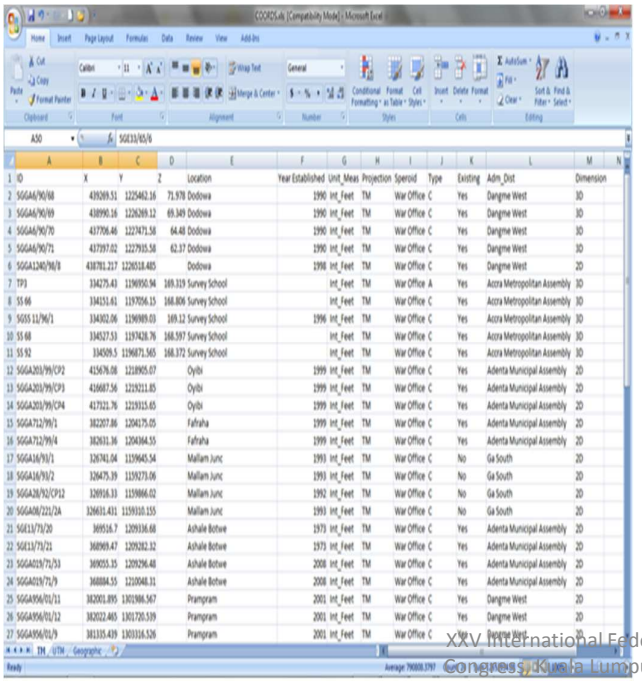
Data Source

❖ The record of some major survey beacons in Greater Accra from Records Section of Survey and Mapping Division - Hard copy
❖ The Record of GRN beacons within the project area from GRN office of the Survey and Mapping Division - Hard Copy (War Office coordinates) and Soft Copy (UTM coordinates
❖ Google map of the project area - Digital

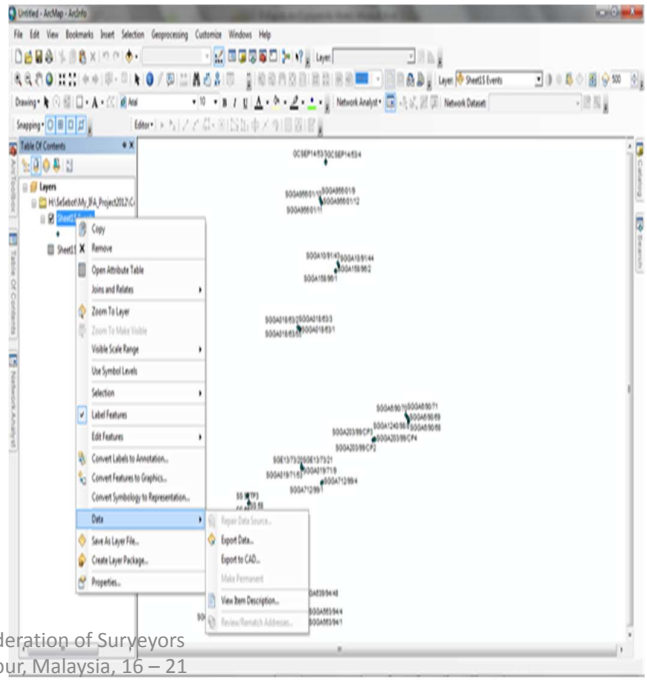
Methodology

The data collected was tested (visit to site to check the existence of pillars), structured in MS Excel and converted to shapefile for projection and conversion to KML file.

Data structured in Excel



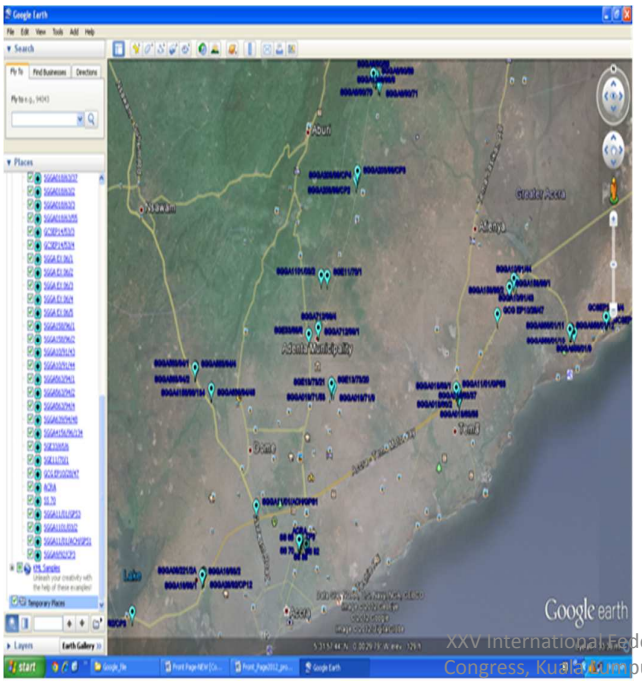
Creating of Shapefiles in ArcMap



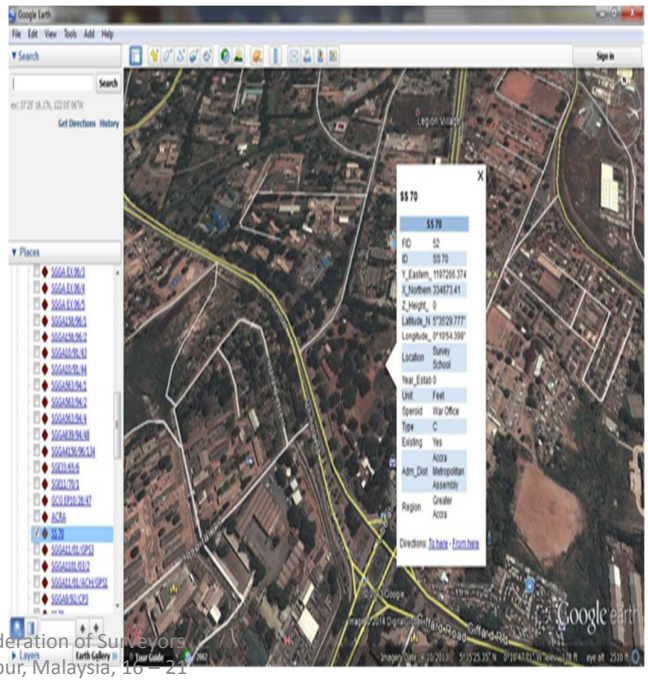
Methodology

ArcMap was used to project the shapefiles into UTM projection and also created the KML file for loading onto Google Earth

Result of the kmz file in Google Earth



A Beacon with details in Google Earth



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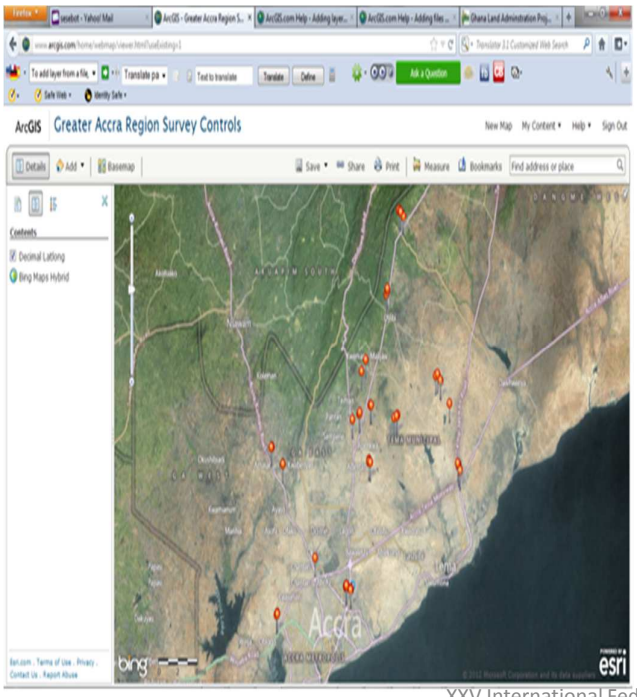
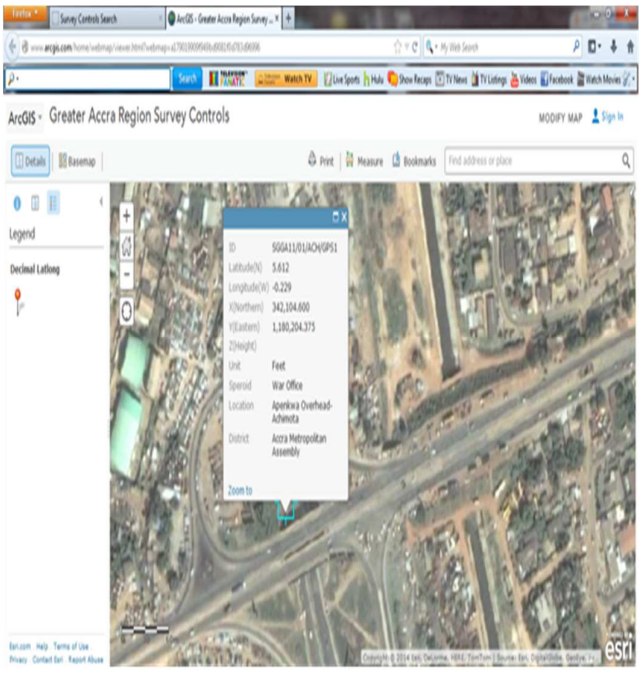
Methodology

Adding data to the map on arcgis online requires creation of global account ArcGIS.com and import your data (csv, txt, shp, etc.)



Display of the added data



Display of a beacon zoomed to its location with its details

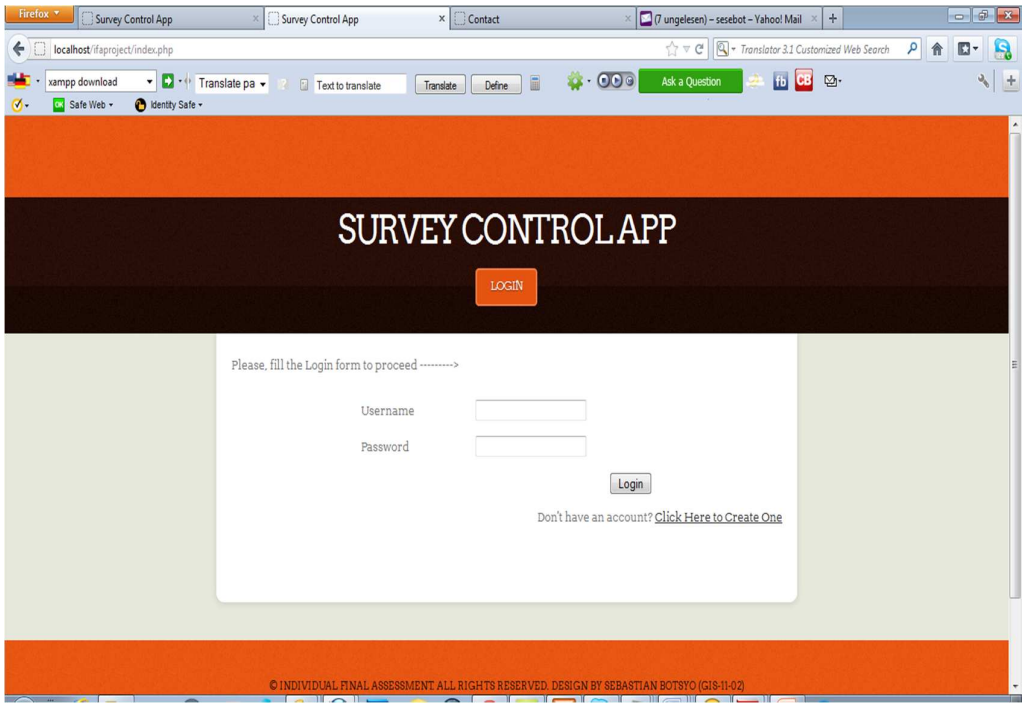
Methodology

WEB APPLICATION

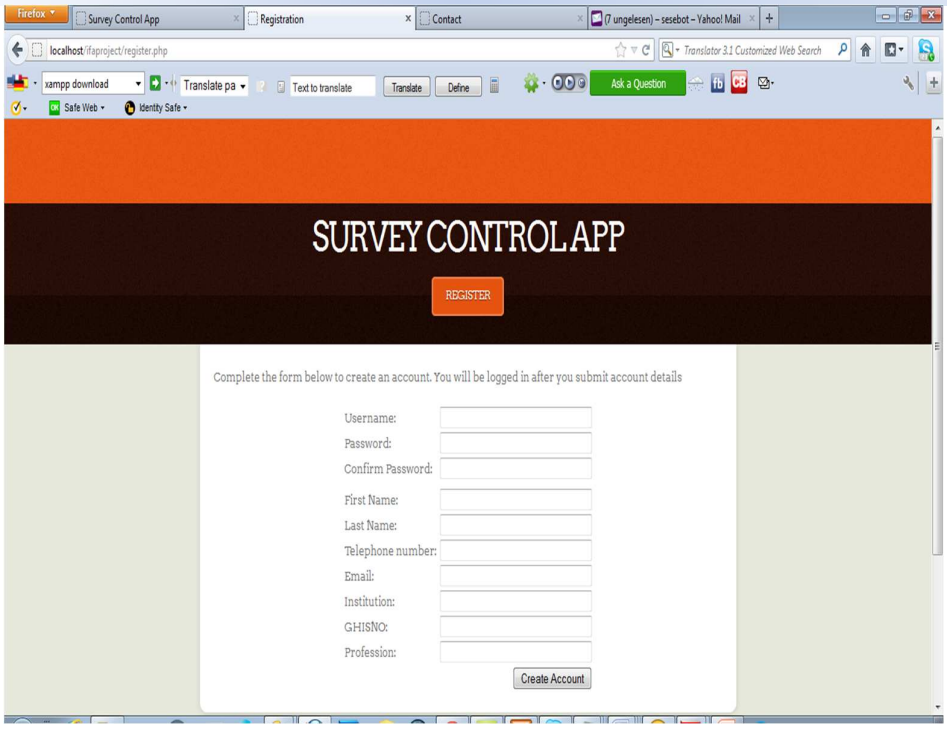
Database of the beacons was created and Navicat Premium was used to manage the database since it is easier to connect to MySQL and create tables. The database contains all necessary attributes of the beacons.

A website with and access interface was designed and linked to the database. The interface give the user the opportunity to create user account which enables him to access information on the beacons with permission from the system administrator. The system administrator can query the system to know the users of the system. Below are some of the results.

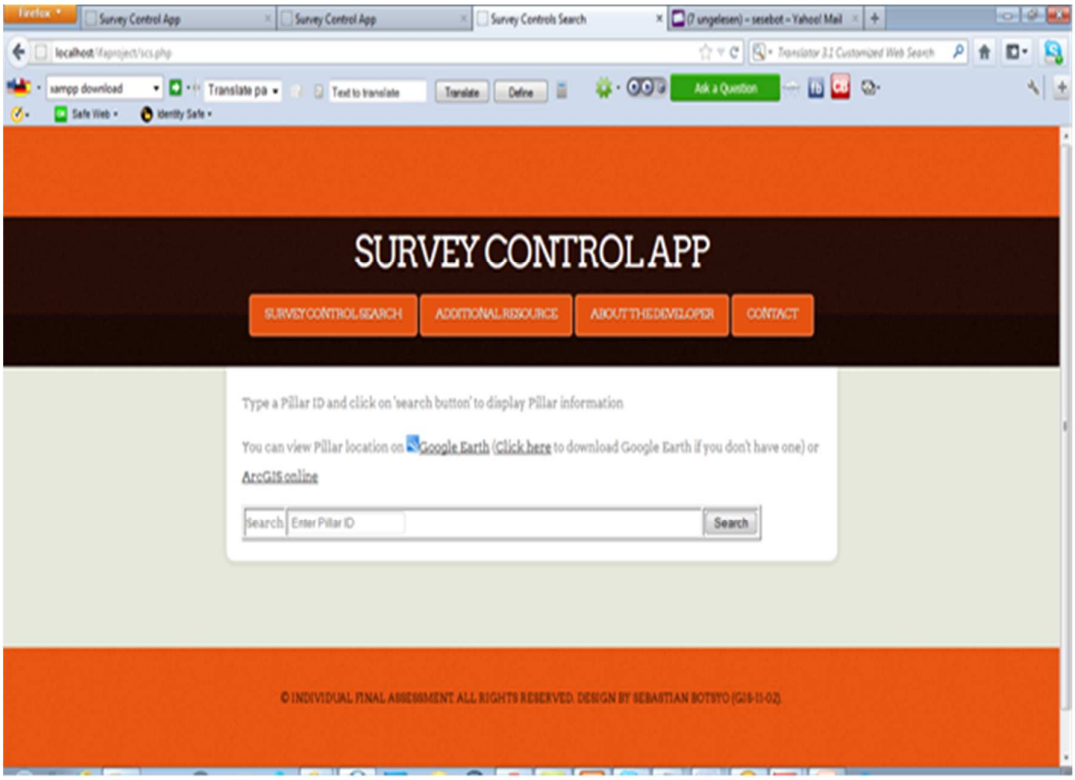
Login



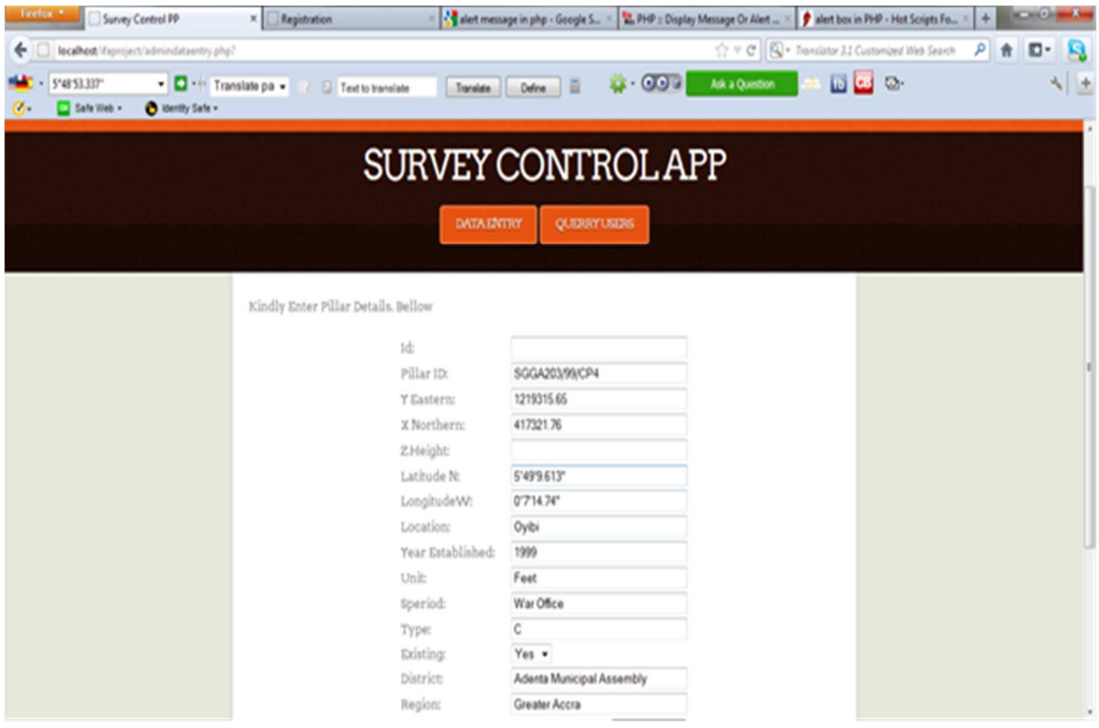
Creation of Account



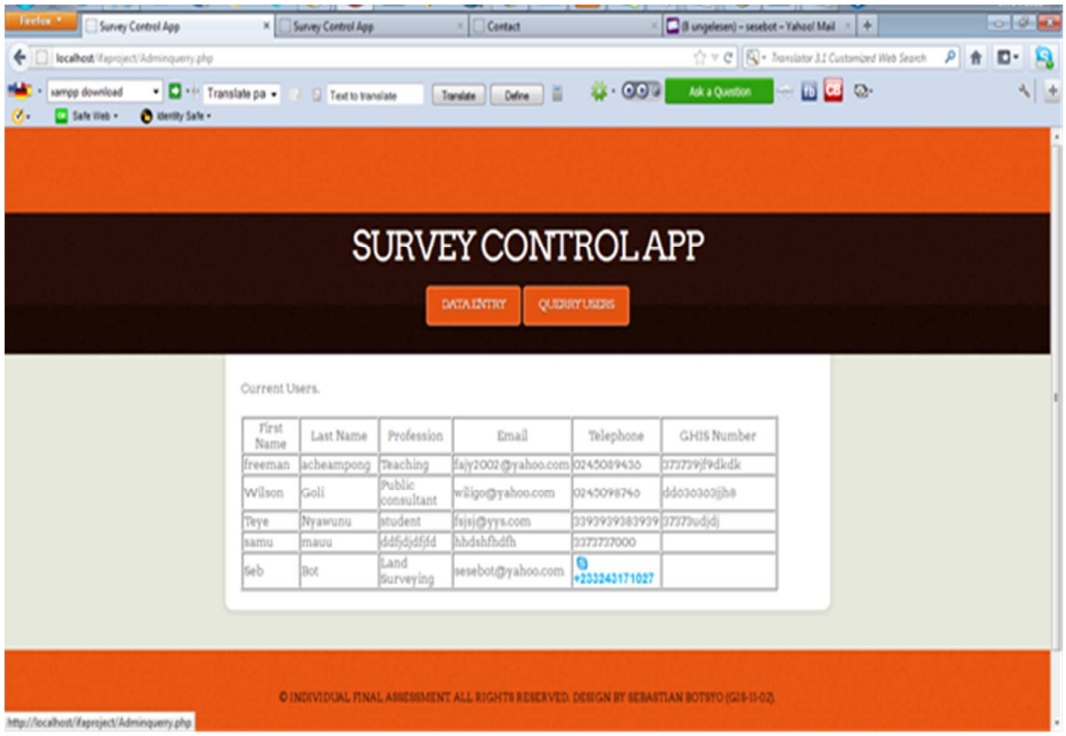
Search Results



Data Entry



Administrator



Thank you