Spider Black Online

UCT

Computer Science Department

Honours

Projects Proposal

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Spider Black Online Description

Overview

Spider Black Online is a Research and Software Development Company that provides Enterprises with professional Research, and Software Development Solutions. Our services range from Software Development, Server Hosting, Server Monitoring and Administration as well as the supply of Hardware.

To offer a complete solution to our clients, we have partnered with industry such as Internet Solutions (Dimension Data) and Dell (Dell Partner). Together with Internet Solutions, Spider Black is able to assist its clientele with consistent and persistent connectivity, networking for data storage access both nationally and internationally. Our partnership with Dell also enables us to supply stable and quality hardware to our clients.

At Spider Black, our main objective is to allow our clients to focus on their core business model while we focus on their Research, Development, Hosting and Server monitoring strategies as well as the daily running of their organization's infrastructure. Our solutions are designed from scratch specifically to resolve and meet the client's individual problem's requirements as an organization.

Statuary Information Members

Eric Musandiwa Mulovhedzi (100%)

Company Registration, Income Tax and VAT Numbers

Company Registration Number: 2008/08993823

VAT Registration Number: 4380262040

Income Tax Reference Number: 9424526169

Address and Contact Details

Telephone: 011 071 1218

Cellphone: 073 008 3187

Fax: 086 510 2258

Email: info@ovhstudio.co.za

Registered Physical Address: Unit A1 & A2

Halfway Gardens Office Park

Cnr. Fred Verseput & Asparagus Roads

Halfway Gardens Ext 4

Midrand, Gauteng

Bankers

Nedbank

Auditors

Mukwevho Management Consulting

Partners

Dell – Hardware

IS (Internet Solutions) – Dedicated Server Hosting and Internet Service Provider

Enterprise Clientele

ABI (Amalgamated Beverage Industries) – a soft drink division of the SAB (South African Breweries Limited)

We developed an (ERP) – Enterprise Resource Planning Solution that's is currently being licensed to be utilized by the whole business from plat level's grass-root levels employees filtering through out to data center managerial staff up-to head office.

Website: http://www.abi.co.za

Core Modules:

1. *Order Management Module* – Used by Call Centre, Account Managers and their MOTs.
2. *New Opportunities and New Outlets* – Used by New Business Development Managers and Call Centre staff.
3. *Driver FBR (Returned Beverages)* – Used by Truck Drivers to communicate to the call center problems they experience while at the field delivering cases. They use a mobile technology called USSD to send request with a selected reason.
4. *Maintenance* – Every one in Business (i.e. Customer's Delivery Days Change)
5. *Call My Route* – Account Managers and Call Center

These are just few of the most daily utilized modules but there are more.

Currently the solution is being used by roughly **2000 users** who log in on a daily bases.

Front Seat Group - Corporate Signage & Billboard Branding

We are a research and development partner of Front Seat Group and have developed a Signage Management System that improves the process they use between their Site Auditors, Graphic Design Team, Finance Department and responsible departments within their Enterprise Client **MTN Innovation** until the actual MTN Signage is installed on that particular sight may it be a Taxi Rank, Store or a Public Area.

This also makes use of **Android** and **iOS** Apps that help with the precession of GPS Coordinates that gets registered at the same time as Site Auditors take pictures. Different MTN Signs can then be identified precisely on a Google map in order to identify where the MTN brand is most visible and where is not as depicted on Fig 1.6.

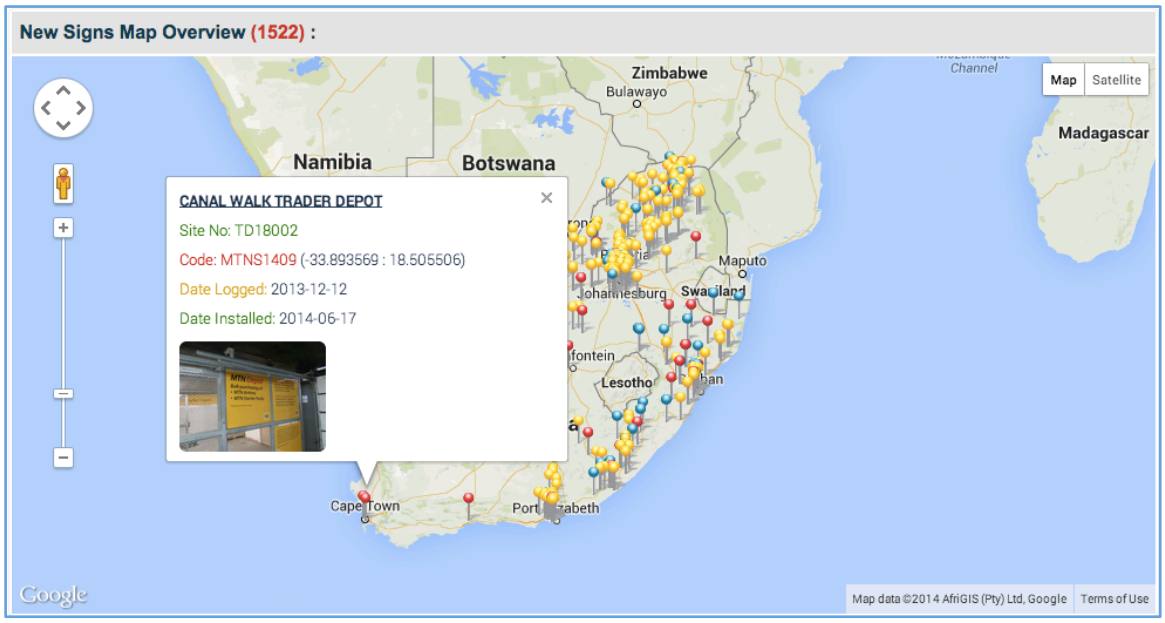

Fig 1.6 Asset Management's Brand Visibility Map Overview Report

The Same System has also been implemented for **GSK (GlaxoSmithKline)** to manage signs for promoting some of their products i.e. **Grand-Pa**, **ENO** and **Aquafresh**.

Website: http://frontseat.co.za

Project No. 1: OVH Server Basement

What is OVH Server Basement?

OVH Server Basement is an *open-source* tool that simply helps you configure your webserver (i.e. Apache) virtual hosts, point and direct them to your desired '/www' folder with sample working PHP, HTML, CSS & JavaScript files automatically linked together and ready for one to start developing their system.

These usually are series of steps under-taken right after operating system installation (in this case Ubuntu), Obtaining of a public IP Address usually static and then Webserver and Database setup.

Fig 2.1 OVH Server Basement Screen Shot

Case Study

Most enterprise organizations are adopting the web-based application infrastructure for their day-to-day business running. This is due to a number of reasons such as system mobility i.e. the fact that if a system is online, one can login and perform their normal tasks at any given time and any where for as long as they have internet connection. There are many more benefits that web-based or cloud applications have over the typical desktop software but they are out of scope of this project.

The way to access this web-based software remotely is via a public IP Address that is usually provided by the Internet Service Provider who are hosting the underlying dedicate server. In order to efficiently utilize this dedicated server, a web server such as Apache (Apache Software Foundation) or IIS (Microsoft) could be installed that will help with the virtualization through sharing of the one public IP Address that gets allocated to multiple different physical portions of the underlying dedicated server resources i.e. Folders or Directories.

This gets archived via something called domains and subdomains that point to certain folders through a method called web-server visualization. This means, in an Enterprise Organization that operates in four regions and has at-least fifteen branches per single region excluding its head office and its data center that comprises of at least 10 departments i.e. Operations Department, Credit Department, Logistics Department, and Fleet Department etc. we will end up having about ***(4 x 15) + 1 + n*** (where ***n*** = number of Organization Data Center's Departments) domains and sub-domains registered for one IP Address pared with one Dedicated Server. A server engineer is usually required for these tasks to be completed carefully without affecting other sub-domains of this system.

In the real corporate world organizations must have at-least three (3) servers each pared with its own individual public IP Address. One server is for the live system, second is for the QA (Development and Testing Environment) and third is for the Backup

System. This automatically implies that every organization will have to have a budget for a server engineer for about ***3 x ((4 x 15) + 1 + n)*** times because these visualization steps have to be taken before the desired system can be implemented by Software Developers.

OVH Server Basement replaces the need of a Server Engineer by automatically presenting and configuring the web-server and redirecting to the actual physical location folders in the server hard-drive.

Project Requirement

25% - Auto-MySQL Database Setup Module:

5% - Auto-CronJob Backup Module

- Backup the actual project code/system residing on the ("*/var/www*")
- Backup the underlying database that the project code/system connects to

7.5% - Amendments on the current (Version 2.5) **wwwPreset** Modules

- ***wwwHTMLPreset*** Module (Login Page): i.e. Username & Password input fields as well as Submit Button
- ***wwwCSSPreset*** Module (Login Page Styling): i.e. Username & Password input fields as well as Submit Button
- ***wwwJSPreset*** Module (Login Page)
    - JQuery Auto-download: This must be downloaded from query's Bower account using the command "bower install jQuery" and must also be properly imported and link it to index.html, index.php and index.asp and index.jsp files i.e. "*bower install jquery"*
    - AJAX Validation of Login Submit Button - This should call a background Server-Side Script to validate both username and password input fields.

15% - Web Based Version

- Here, students are required to develop the entire web based version that includes all modules

5% - Product Modules Integration

- This entails communicating and interacting with OVH Server Basement research and development Team

5% - Documentation

- Final Project Documentation including all the findings, improvements and problems encountered through-out the project

2.5% - Formal publishing of the product and its documentation on the product Documentation, Website and Product Release Version.

NB: This can only be done if the underlying module is complete and ready for release

7.5% - Innovative Contribution

- Students are required to come up with innovative ideas (i.e. Implement Extra Module) on their own

Programming Languages Required

Core Development – C++

Other Supporting Modules - PHP, HTML, CSS, JAVA-SCRIPT (jQuery Library)

Database - MySQL

Website

http://ovhserverbasement.co.za

Project No. 2: OVH Health (Patient Management) System

What is OVH Health System?

OVH Health System is an electronic filing system that simply captures two and only two things and these are:

- Patient Details or Information and
- Patient Visits (Also called Patient History)

This software is for FREE and available for use by Previously Disadvantaged Health Institutions in Africa (i.e. Only African Government / Countries) such as clinics and hospitals situated at the rural areas or sometimes even main cities in poverty-stricken countries.

The main aim of this system is to improve health departments all over Africa with basic administration through the way data is managed, mined and reported to.

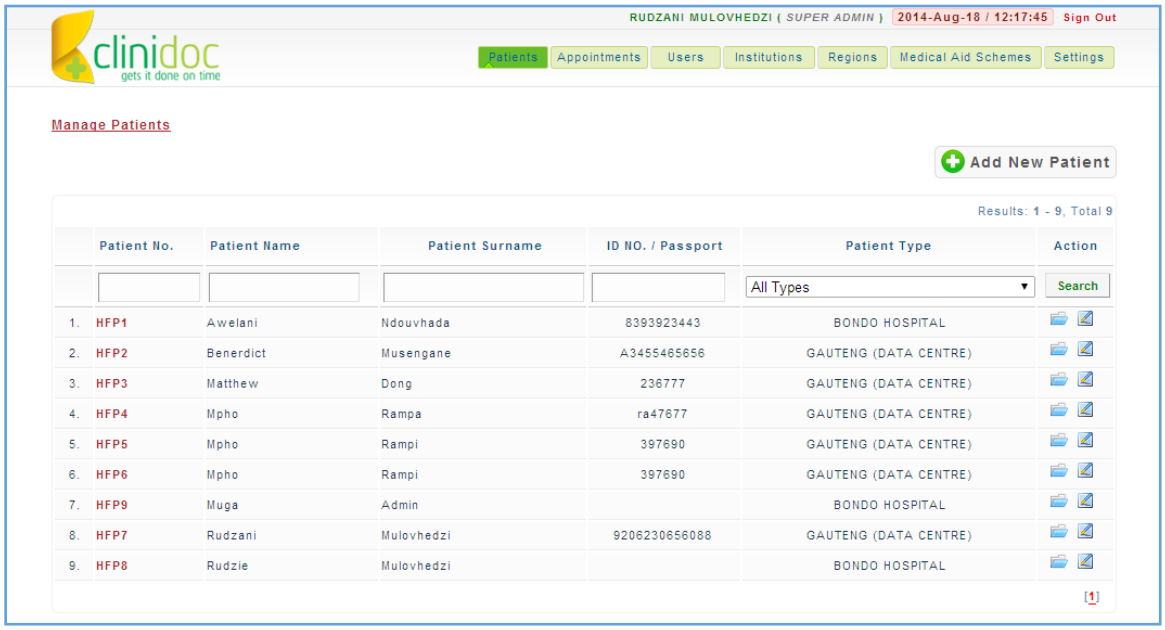

Fig 3.1 OVH Health System Screen Shot

Case Study

Scenario 1:

Every time one goes to previously disadvantaged public clinics or hospitals more especially the once situated in the rural areas, the first thing they do is ask for your name and surname, then go to some back-door room full of cabinets where they will start to manually search for your file based on your surname starting from the middle i.e. Surnames with letter "**M**".

Scenario 2:

For admitted or stay in patience, when their relatives and loved once go to visit them the first thing they do is to ask for the name and date when the patient was admitted. Then they open registry book page-by-page while navigating to see the reason why patient has visited the institution, which will be able to help them identify the actual location where the patient is admitted.

Scenario 3:

Duplication is also a bring problem, some patients especially the once with chronic illnesses i.e. HIV and require monthly medical attention are currently visiting their local clinics or hospitals more than once a month to collect antiretroviral medication. Every time these kinds of patients visit different institution they get regarded as new patients with new patient records and patient numbers even though they are under the same district and region and this gets recorded as distinct record on the reports.

Conclusion:

OVH Health (Patient Management) System helps with patient data retrieval through its efficient data search functionality only by providing patient number, name, surname, ID Number or date of birth.

Patient Duplication problem is also resolved permanently since data is captured into the system with each patient record generated with a unique database reference number.

Also, each time a patient visits a particular health institution a background check is done first to see if they haven't been in any of near-by health institutions under the same region-district for that particular month since this application operates under a centralized database per individual reason.

Project Requirement

15% - Acquiring two previously disadvantaged health institutions preferably around Cape Town since it will minimize their travelling costs.

GUI (JAVA & SQL Server)

7.5% - Patient Results Module

- Doctors and Nurses will login into this module to update diagnosis results for the visiting patient
- This module will have to connect to a local SQL Server centralized to every department in the same institution (i.e. via Intranet)
- Synch this data with the remote / online Patient Results Module using the Synching API we already developed and will be provided to you.

8.5% - Private Health Care Integration Module

- A GUI-Based standalone mini application that takes Patient Identity Number as its parameter
- This application only retrieves patient particulars as well as patient history from the any health institution using OVH Health System (We will start by retrieving only six (6) patient's last visits)
- Integration must be implemented using WSDL-SOAP Client API
- NB: This will available as a One-Way for now i.e. only retrieves data from the OVH Health Application but does not accept data request from Private Health Care Institutions

WEB-BASED (PHP & MySQL)

12.5% - WSDL-SOAP Web Service Integration API

- SOAP Server (to be Utilized by remote Applications)

    - Private Health Care Institutions that already have administration systems in place will use this WSDL (SOAP) client to integrate with their applications
    - It retrieves patient particulars as well as patient history from the any health institution using OVH Health System (We will start by retrieving only six (6) patient's last visits)
- SOAP Client API (This utilizes the above SOAP Server API)
    - Private Health Care Institutions that already have administration systems in place will use this WSDL (SOAP) client to integrate with their applications

12.5% - System Reporting:

Reports for both acquired health institutions must be consolidated into one report grouped by the underlying institutions, then sub-grouped by illness category ordered by date-time of visit.

- Daily Activity Report
    - This will be in a form of a table that consists of total summary and detailed patient visit activities grouped by Patient Type or Category or Illness already captured on the visit records
    - These will automatically be triggered by a Linux CronJob to run every day at 22h00
- Weekly Activity Report
    - This will also be in a form of a table that consists of total summary and detailed patient visit activities grouped by Patient Type or Category or Illness already
    - These will automatically be triggered by a Linux CronJob to run every Sunday at 22h00 and will contain all the activities that occurred on that past seven (7) days from the time they run
- Monthly Activity Report
    - This will also be in a form of a table that consists of total summary and detailed patient visit activities grouped by Patient Type or Category or Illness

already

- These will automatically be triggered by a Linux CronJob to run every first day of a new month at 22h00 and will contain all activities that occurred during previous month

5% - Product Modules Integration

- This entails communicating and interacting with OVH Health research & development team.

5% - Documentation (Final Project Documentation including all the findings, improvements and problems encountered through-out the project)

2.5% - Publishing this on the product Website

NB: This can only be done if the underlying module is complete and ready for release

5% - Innovative Contribution - Students are required to come up with innovative ideas (i.e. Implement Extra Module) on their own

Programming Languages Required

Core Development – JAVA, PHP, WSDL (SOAP)

Other Supporting Modules - HTML, CSS, JAVA-SCRIPT (jQuery Library)

Database – SQL Server, MySQL

Website

http://ovhhealth.org

Projects Value-Adds from Spider Black

Project Commits/Uploads/Submissions Management System

Spider Black Online developed this basic commit & uploads management web-based system that students will use to upload their project and progress reports such that our Spider Black Online team as well as UCT staff can also have access to be able to login and review the submitted work. Please refer to Fig 4.1.

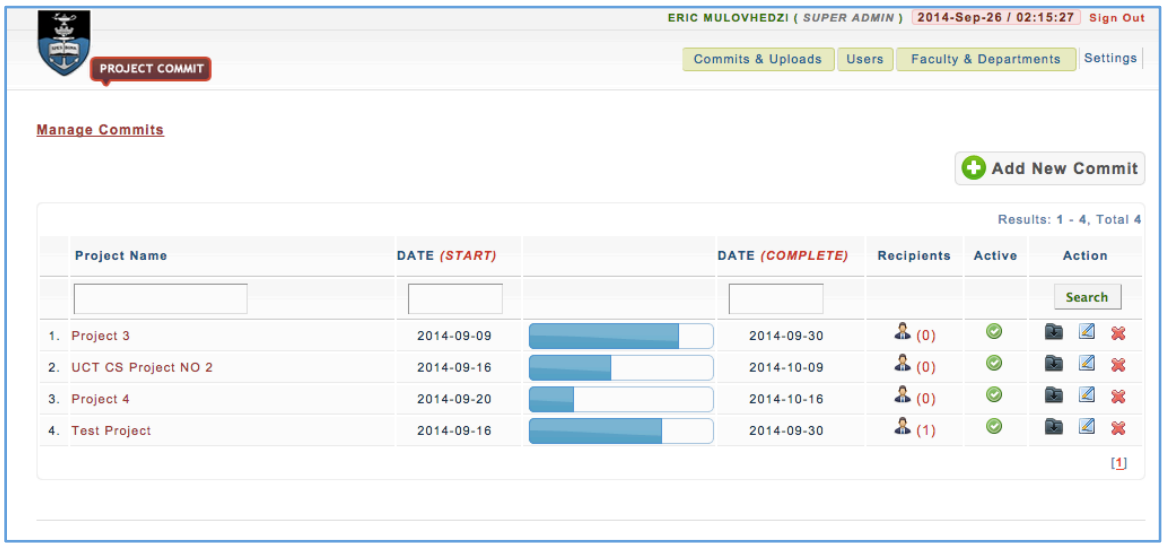

Fig 4.1 Project Commit Uploads Management System

And each-time files gets uploaded into the system, all parties involved in that particular project gets notified via email that someone has uploaded their lasted work as depicted below in Fig 4.2:

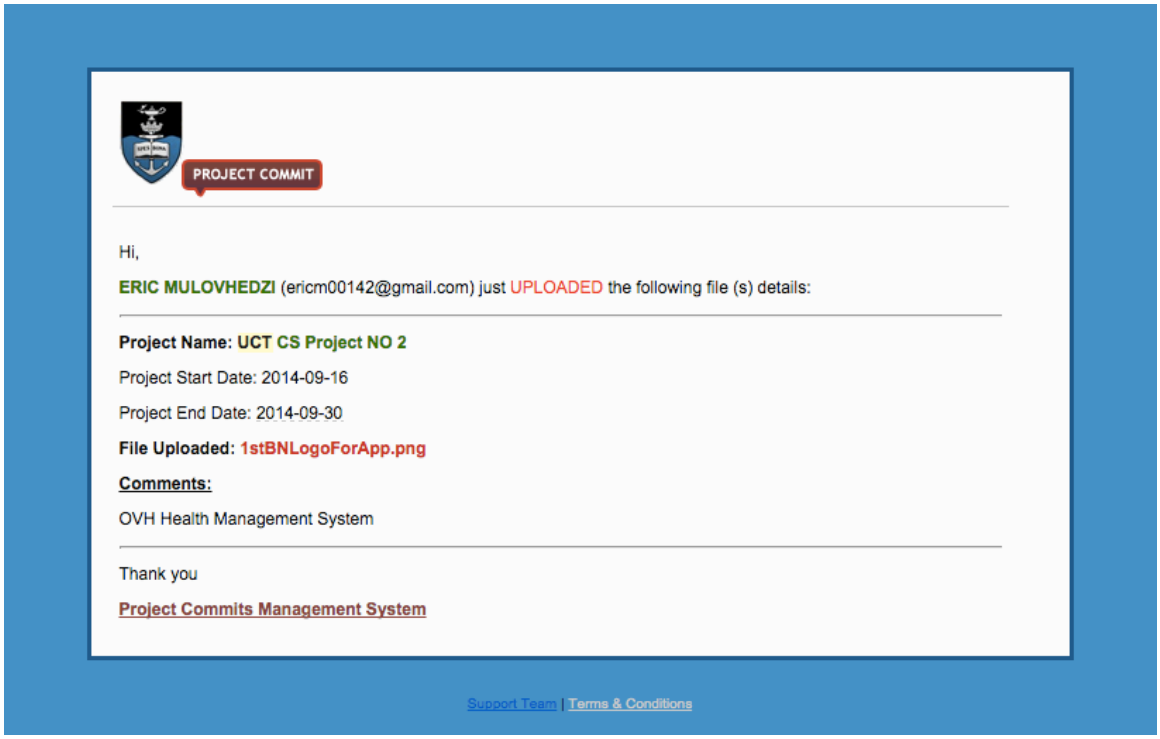

Fig 4.2 Commit Upload Notification Email Body

Financial Assistants

Note that Spider Black Online will contribute R 5000.00 to each student's tuition fee i.e. for all four (4) students the total amount will be R 20 000.00.

If they happen to choose the Patient Management system this R 5000.00 per student can be utilized on the up-and-downs and communicating cost in order to efficiently facilitate this project efficiently.

Other Special Assistants & Contributions

OVH Server Basement:

Spider Black will setup and give each student a portion of space in one of our dedicated servers in order to run and test his or her modules during the course of the project remotely via SSH.

OVH Health (Patient Management System):

NB: Spider Black has been offering at-least one computer, a printer and wireless Internet modem for each previously disadvantaged health institution.

Two (2) Computers, Two (2) Printers and Two (2) wireless Internet modem will be provided for student to facilitate to those two previously disadvantaged health institutions.

Thank you.