



# VIRTUAL CAMPUS SYSTEM

V1

**A POWERFUL ASYNCHRONOUS ONLINE DATABASE ENGINE**

**FOR UNIVERSITIES & TERTIARY INSTITUTIONS**

21st Century Technology

**PRODUCT OF AYSH INVENTIONS LIMITED**

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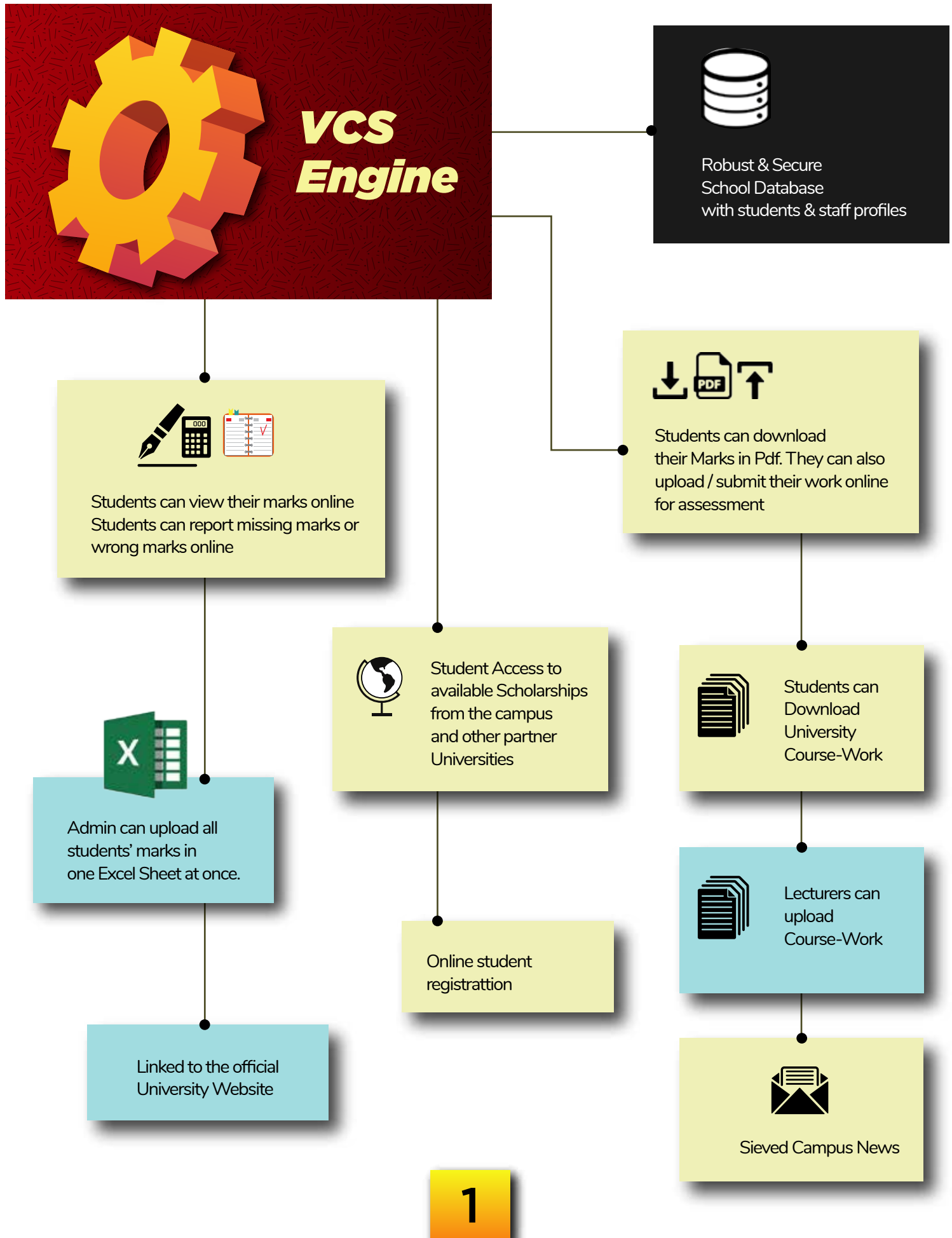
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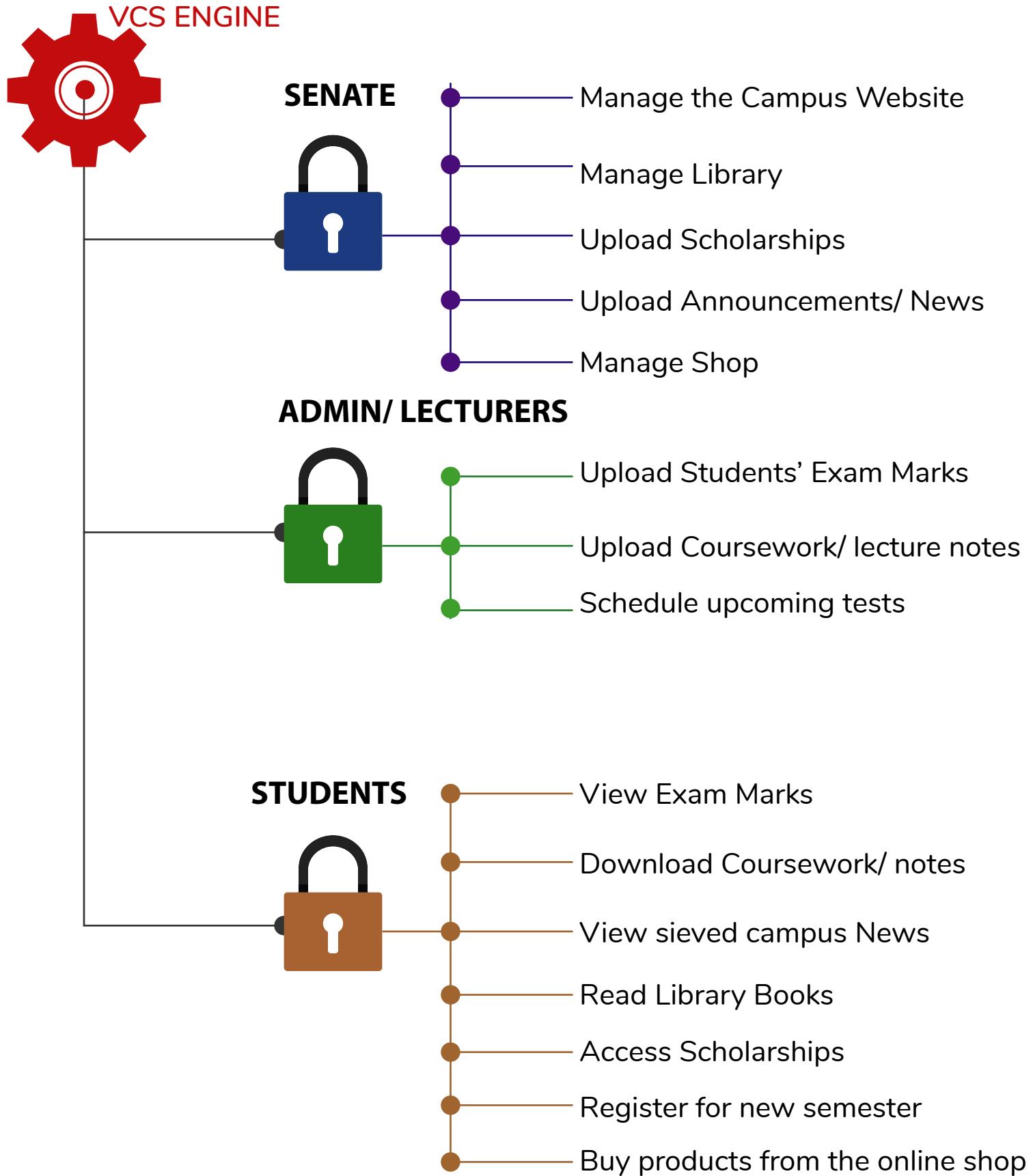
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# SYSTEM FUNCTIONS



# SYSTEMATIC DIAGRAM



# ***SYSTEM STRENGTHS***

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***& KEY FEATURES***

# 1

## ***STRONG ARCHITECTURE***

The system is built using the most robust and reliable technologies, proven over decades for their outstanding performance in Speed, Security, & Stability.

Database	MySQL/ Postgresql/ Oracle
Server programming	Java 8.0
Client-side programming	JQuery / Javascript
Responsive User Interface	W3CSS

# 2

## ***USER FRIENDLY***

Our technology is compatible with the famous Microsoft excel versions from Excel 2007. The Admin can upload an excel sheet of marks for the entire class, then the virtual campus engine generates



individual marks, grading and averages for each student independently so that each student is able to only access their own marks and not other students’.

# SYSTEM **SECURITY**



# ***SYSTEM SECURITY***

The System has 3 Layers of protection, each layer using unique security technologies.

1. Database Security
2. Server-Side Security
3. Client-Side Security

## **Layer 1**

## **DATABASE SECURITY**

### ***User authentication levels.***

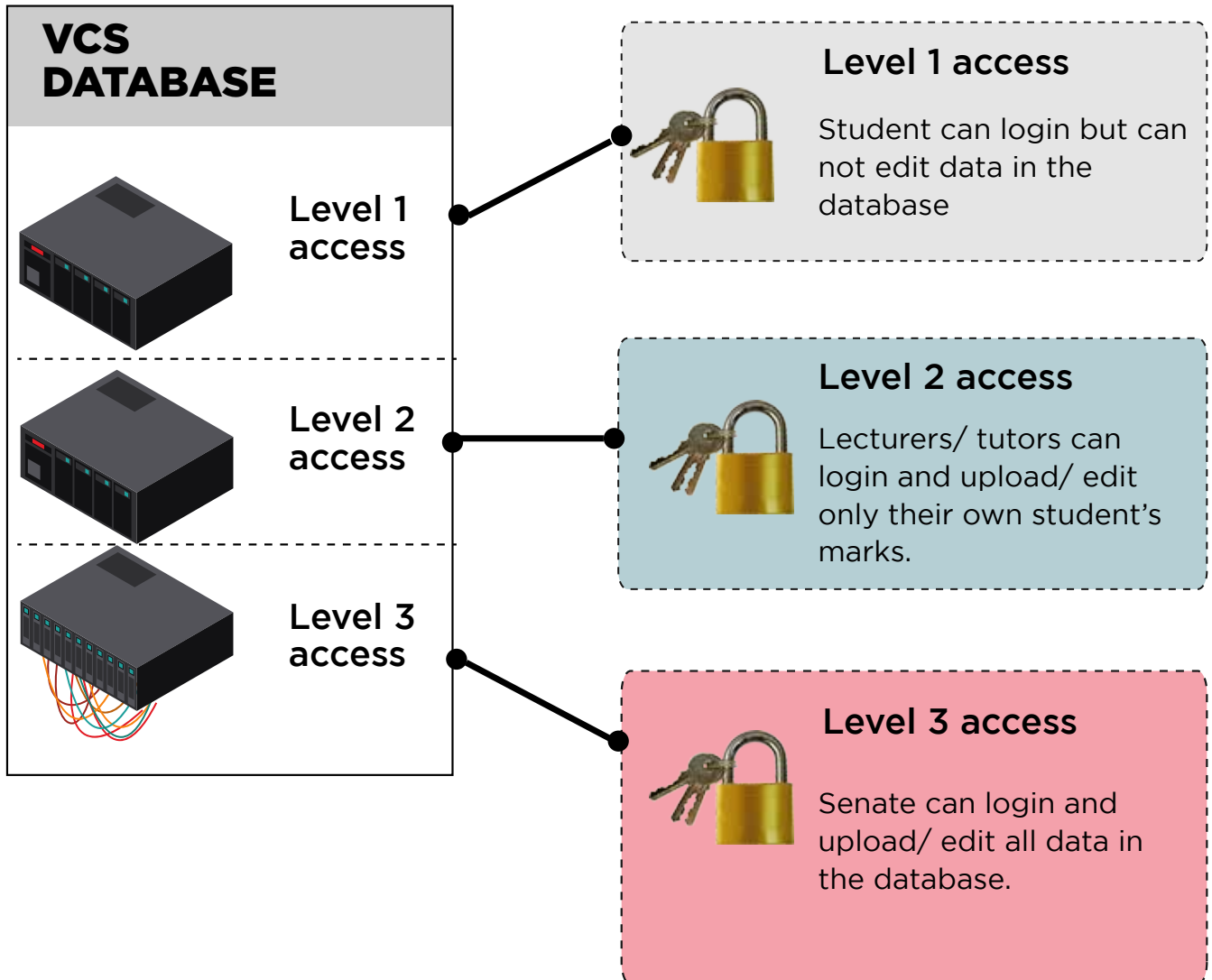
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The database has been portioned into several database layers each having different access levels. Because of this, unauthorized personnel can not access the database. Students only have access to view data from the database but have no option to edit any bit of it. Lecturers & the various departments also have access to only specific data that directly concerns them e.g. the subject/courseunit they teach & for a particular class. The senate has authorization to update all the University's data in the database.

# SYSTEM SECURITY

## Layer 1

## DATABASE SECURITY





# ***SYSTEM SECURITY***

## **Layer 2**

## **SERVER SECURITY**



The web application shall be hosted on 3 servers in 3 different countries (US, Netherlands and UK) for safety purposes to guarantee maximum uptime (system doesn't shutdown in case of server failure).



Also, the web application shall be hosted on the latest version of the Apache Tomcat server & shall use Secure Socket Layer (SSL) protection



The System server is programmed using Java, the proven most secure and stable server language since 1995, used by Oracle, Google & NASA.

## **Layer 3**

## **CLIENT-SIDE SECURITY**

### **User authentication.**



Data shall only be accessed by authorized personel after they have logged in with their authorized credentials.

### **Cross-site request forgery (CSRF) protection**



Login details shall expire in a given short time set by the user. After the chosen period the system shall automatically log itself out and require a fresh login. This way accounts shall not be hacked due to redundance or forgetting to logout.

# 4

## ***HIGH SPEED***

Using JQuery asynchronous technology, the system engine has been built to have super fast page navigation speeds. This favors system usage despite slow internet.

The system database also has a relational data structure that quickens fetching of data.

# 5

## ***OTHER STRENGTHS***

### ***SYSTEM STABILITY***

The system remains stable & does not crash even when the Web Application is accessed by thousands of users at the same time. This is due to the Java multi-threading technology.

### ***RESPONSIVE DESIGN***

The system is accessible and looks nice across diverse electronic devices: Laptops, Smart phones of all sizes & types, Tabs, and Desktops.

# ***COST / REMUNERATION***

The cost details of this technology including all the works involved and their respective timeframes have been clearly indicated in the draft legal contract document,

SECTION **ANNEXURE “A”** page 8 and the schedule of payment has been detailed in SECTION **ANNEXURE “B”** page 11 & 12.

The Service Provider (Aysh Inventions Limited) shall only be entitled to remuneration in accordance with this agreement whilst the agreement remains in force.

## ***PARTNER TECHNOLOGIES***

ORACLE INC.

JVMHOST

ADOBE INC.

iTEXT

MS EXCEL

BIGEZO.COM

VIRTUAL CAMPUS SYSTEM V1

FOR A **LIVE** DEMO

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