# SAN JOSE LITEX SENIOR HIGH SCHOOL STUDENT PORTAL: FUNCTION AND USER INTERFACE

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**SAN JOSE LITEX SENIOR HIGH SCHOOL**

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# CHAPTER 1

# THE PROBLEM AND ITS BACKGROUND

This chapter presents the introduction of the study, its background, research problems, significance, scope and delimitation, and the definition of terms.

# Introduction

The utilization of advanced technology in school environments has led to increased efficiency in processing and exchanging information, maintaining data quality, and an increase in the quality of education and services (Habagat, 2017). An example of this innovation is a student portal. Students can easily access pertinent documents and information through the use of a student portal. This is possible through the storage, retrieval, and manipulation of data in real-time transactions (Inoco & Hernandez, 2017). According to Alatawi et. al. (2020), portals are gateways of information that supply users with the information they need from various sources and display it on a single page. Furthermore, according to Aden (2019), easier connections can be made between the education institution and the learner through the adoption of student web portals which would establish a communication channel between the two bodies.

In San Jose-Litex Senior High School, there is yet a portal or even an official school website created for its operations. This is especially crucial during the COVID-19 pandemic. To find school-related information, students either have to search for the Facebook page of the school which has incomplete information, or go directly to the school and find personnel relevant to their needs which is a time-consuming and laborious process. Additionally, finding student-related information especially during the start of the school year, is an arcane process for many due to the insufficient dissemination of information regarding the student’s adviser, section, room number, and other important details. Therefore, due to the perceived benefits of a student portal, the study aims to design and develop an official school website with the integration of a student portal to improve the overall operations of San Jose Litex Senior High School.

Functions of the website include; an Information Establishment Section which will allow for the retrieval of information ranging from the background and history of the school, to details about the available strands that a student may take-up. A News Announcement section, a part of the website which would allow for formal publication of school-related news thus eliminating the need for the school administrators, alongside the school’s multiple clubs, to broadcast news on multiple and separate Facebook pages. A Contact Inquiry Section, this provides the contact information of the school’s administrators, the teachers, and other officials. It aims to provide an official system for communication which would help the students, alongside their parents, contact the school officials and inquire about their academic status. An Enrollment Section where students can readily see upcoming enrollment dates as well as the enrollment procedure along with the prescribed requirements. And the Students’ Portal, the main function of the website, which provides the students a central access point for information so that they may easily access their education records such as grades, academic records, class schedules, and subject offerings, especially tailored for their individual specificities.

The website is crafted using well-designed components to make the process of navigating it friendly and intuitive for the user. Additionally, components of the website are logically subdivided into modules which have their individual functions to enable the seamless experience of finding information faster for the user. Content creation for the teaching staff and administration and moderation for the non-teaching staff are easy tasks since the website is equipped with an integrated administration interface. Due to this, the website is also flexible for integration with other systems and processes within the school. As such, this enables school organizations to also have their own page for publishing their prepared activities and upcoming events. In terms of security, The website is equipped with tight security measures such as tokens to prevent Cross-Site Request Forgery (CSRF) and Cross-Site Scripting (XSS) attacks, protection against SQL injections using user input sanitization, password hashing which stores user passwords in a cryptographically secure hash value. Furthermore, logging authentication, the website implements a two-factor authentication system and a final layer of verification from the administrator.

# Statement of the Problem

The study aims to answer three main questions related to the development of the student portal:

1. What is the user category of the respondents?
2. What is the level of acceptability measurement of the San Jose Litex Senior High School Students’ Portal in terms of:

2.1 Perceived Convenience

2.2 Perceived Usefulness

2.3 Perceived Usability

1. Is there a significant difference between the level of acceptability measurements of the respondents of the San Jose Litex Senior High School Students’ Portal?

# Null Hypothesis

The study’s null hypothesis indicates that there is no significant difference between the levels of acceptability measurement of the respondents of the San Jose Litex Senior High School Student’s Portal.

# Scope and Delimitation

The general aim of the research is to create a website and an integrated student portal for San Jose Litex Senior High School wherein its main purpose is to enhance the capacity of the students and teachers to conduct online activities through a centralized access point of information. The scope of the research includes the Grade 11 and 12 students, teaching staff, and the administrative staff of San Jose Litex Senior High School within the school year 2022-2023. The study will be using a quantitative experimental research design and respondents will be asked to use the website and answer a Likert-scale survey form to determine its level of acceptability measurement.

Furthermore, the school website is publicly accessible while the student portal’s access is limited for the use of Grade 11 and 12 students of San Jose Litex Senior High School along with its teaching and administrative staff. It is under development during the school year 2022-2023 and is expected to be fully operational by the next academic year.

# Student Portal Scope

Front-End:

* Provide access to student-related information
* Provide access to general school information
* Allows viewing of student grades
* Provide a channel for teachers to disseminate information
* Allows students to download modules and files uploaded by their teachers
* Allow direct messaging between students and the school’s teaching staff

Back-End:

* Manage student information
* Manage student and teacher log-in

# Student Portal Limitations

* Does not facilitate enrollment
* Does not enable the direct delegation of tasks and its grading

# Significance of the Study

Due to the prevalence of information and data, and their increasing importance to the modern world, there is a need to construct relevant structures to organize information within a single, central access point. This is crucially important especially during the COVID-19 pandemic.The study is undertaken as the researchers deem that the development of an official school website and an integrated student portal will better illustrate to institutions, organizations, and the ICT field the importance of adopting technologies and transitioning to a digital environment. Furthermore, this research is pertinent to four key bodies.

**Students** are given easy access to student-related information and better access to school-related information for incoming students. Students will be able to see their periodical subject grades, view and download resource materials related to their study, see teachers, organizations, and the school’s important announcements, dates and upcoming events, as well as view pertinent information such as section, room number, adviser and their contact details.

**Teachers and the administrative staff** are able to enhance their traditional operations to make it more convenient. Teachers will be able to communicate with their students more effectively through better dissemination of information, easy inputting of grades, and distribution of learning materials.

**Parents** have no difficulty in visiting and viewing school-related information which provides transparency and fosters a better connection between the educational institution and the concerned parents.

**The educational institution's** exposure and visibility increases through the website and the student portal which is an excellent method to build reputation that can further imply student enrollment influx. Specifically, this helps the school differentiate itself from their competitors, provide a better experience for the families during the enrollment process, and support recruitment efforts by showcasing the school’s technology and innovation.

# Definition of Terms

Artificial Artificial Intelligence (AI) is the simulation of human

Intelligence intelligence in machines that are programmed to think

and learn like humans.

Augmented Reality Augmented Reality (AR) is a technology that superimposes digital content, such as images, videos, and 3D models, onto the real world.

Back end refers to parts of a computer application or a program's code

that allow it to operate and that cannot be accessed by a user.

Bootstrap CSS is a popular open-source front-end development

framework that is used to create responsive, mobile-first

websites and web applications. It was developed by Twitter and

was first released in 2011.

Cascading Style allows you to specify things like the colors, fonts, layouts,

Sheets (CSS) and spacing for different elements on a web page.

Cross-Side is an attack that tricks a web browser into executing

Request an unwanted action in an application to which a user is

Forgery (CSRF) authenticated.

Cross-Side is a type of computer security vulnerability where

Scripting attackers inject malicious code into web pages viewed

(XSS) by other users.

Database is an organised collection of data. More specifically, a database

is an electronic system that allows data to be easily accessed,

manipulated and updated.

Django is a high-level Python web framework that follows the

model-view-controller (MVC) architectural pattern and enables

rapid development of secure and maintainable websites.

Django Templates is a system for separating the presentation of a Django

application from its Python code, allowing for more

maintainable and reusable code.

Django Models are Python classes that define the fields and

behavior of the data stored in a Django application, and provides an ORM to interact with the underlying database.

Django Views handles the logic of processing the HTTP request

and returning the HTTP response, it defines the business logic and interacts with Models to perform the action requested by the user.

Front end is the layer above the back end is the front end and it includes

all software or hardware that is part of a user interface.

HTTP or Hypertext Transfer Protocol, is the standard communication

protocol used for transmitting data over the internet, typically

between a web browser and a server.

Hyper-Text is a language that is used to create the structure and layout of

Markup Language webpages. It consists of a series of elements, represented by

(HTML) tags, which define the different parts of a web page. These

elements include headings, paragraphs, images, links, and

more.

Information refers to the technologies and tools used to transmit, receive,

Communications and process information.

Technology

Information is the application of computers and internet-based systems to

Technology store, retrieve, transmit, and manipulate data.

Input is the process of filtering and cleaning user input to remove

Sanitization potentially harmful characters and prevent security

vulnerabilities.

Javascript (JS) is a programming language that is commonly used to create

interactive and dynamic web pages. JavaScript code is executed

by the web browser, which allows it to update the content and

layout of a web page in real-time, without the need to refresh

the page.

MySQL is a popular, open-source relational database management

system (RDBMS) that is widely used to store and manage data

in web applications. It is known for its reliability, scalability,

and ease of use.

Password is the process of converting a plain text password into a hashed

Hashing value using a mathematical algorithm, which is then stored in a

database to protect the user’s password from being easily read

or stolen

Perceived refers to how easy and hassle-free the students and teachers

Convenience find it to use the student portal for various tasks, such as

accessing information or downloading materials.

Perceived is the individual's perception of the ease of use of a technology.

Usability

Perceived is the belief that using a particular technology will improve

Usefulness one's performance or accomplish a task more effectively.

Portal is a term, generally synonymous with gateway, for a

World Wide Web site that is or proposes to be a major starting

site for users when they get connected to the Web or that users

tend to visit as an anchor site.

Product is the process of defining, designing, developing, testing,

Development Life launching, and iterating product, from the initial idea through to

Cycle the end of its useful life.

Python is a high-level, interpreted programming language that is

widely used for web development, scientific computing, data

analysis, artificial intelligence, and other applications.

Relational Database is a database management system (DBMS) that is built on the

Management relational data model.

System (RDBMS)

Source Code is the set of instructions and statements that a computer

program is written in.

SQL Injection is a type of cyber attacks that allows an attacker to insert

malicious SQL code into a web application’s input fields,

Leading to unauthorized access to the application’s database.

Structure design is the process whereby the structural engineer begins with little

more than a set of loads and design constraints and proceeds

iteratively to obtain a structural configuration that satisfies all

of these constraints.

Two-Factor is a security process that requires users to provide two different

Authentication authentication factors, such as a password and a unique code to

their mobile device, in order to access a system or account.

URL or uniform resource locator, is a string of characters that specify

where a particular resource, such as a web page or an image,

can be found on the internet.

User interface is the point of human-computer interaction and communication

in a device.

Virtual Reality Virtual Reality (VR) is a computer-generated simulation of a three-dimensional environment that can be interacted with using specialized devices such as headsets or gloves.

Web is an interconnected system of public web pages accessible

through the Internet.

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