**CHAPTER 1**

**INTRODUCTION**

**1.1 Overview of project:**

In the modern day of learning and as well as in teaching the advanced methodologies are being bought into the picture. Leaning with technology has been an easy task nowadays and as well as the teaching.

Students who been perusing their education in rural areas have very less amount of resources, it might be the software resource or the hardware resources.

Even if they could manage to bring some number of computers to the institution it might be difficult for them to manage all the student’s, and even to maintain the high end & expensive software's.

To make this both task effective we have been come up with an initiative of building an application which is capable of helping out the students in their learning process. The students are being provided with some of the necessary tools which will help them out in all the learning aspects. Some of the major tools are web browser which will help the students surf though the internet to explore the unknown facts! Documents explorer to get the study materials provided for the particular grade, calculator for the mathematical calculations and finally a mini ai based game for the student ‘s refreshment.

All we talked above was about the students but now in picture we are been discussing about the teachers who are been managing their students. The ‘Stu-Ins utility management system’ is a tool which is built to work with less resources and with more tools.

Students can easily utilize the provided tools in the software whereas the teacher can easily manage their students in a very precise manner.

The teachers have the fully functional and controlled access over their students. They could manage their students in all the aspects. They could set the protocols over their students like which and all tools they should use and which all not to. The security is the top priority for teachers as there are some of really personal and important data are been store in the database. Not a single student can perform an activity without the conscious of the teacher.

**1.2 PROBLEM STATEMENT**

The Students who are been studying at the rural areas are provided with the less features , and as well the Institutions cannot afford the best resources so, we thought of doing this in a best way, i.e. we thought of implementing all the tools in under one roof so that all the tools will be handy and as well the Resources are also required in the less proportion. With less amount of Resources more tools can be utilized.

**1.3 OBJECTIVES**

* Helps the students to access essential required tools such as Browser, Calculator, Document viewer in a single application.
* Helps to teacher to monitor the students by the usage of application.
* Teacher can enable/disable applications for all/particular student(s).
* Institute can manage the student’s data like personal details, CGPA.
* Institute can upload the notifications for all the students at once.

**CHAPTER 2**

**LITERATURE SURVEY**

**2.1 Literature review**

As colleges got expanded the number of students also got increased and also the student related contents increase, the paper provides the particulars to carry out the performance, management and decision-making functions of enterprises or organizations. Enormous grow of students is caused to expand the functionality in the respective educational institutions. As student added to the educational system it is difficult to manage and track student details. To overcome difficulties, we come up with this new approach student information management system with additional features. This new approach will provide fast processing, efficient student tracking, and produces desired result. This approach will allow students to save their personal details. It is more secure, reliable and easy to use.

In the earlier days it was a difficult task for the management and as well for the institutions to maintain the records of their students for the long period of time. All the details were being entered in a single ledger and they were so massive in size to store. For time being all the older and important files were being thrown away to make space for the new ones. They had to do this because they had no other option. So, for that we took an initiative to solve this kind of problems with the help of technology. As the technology got evolved over a period of time we thought of implementing this advanced computer science technology to solve the issues like storage, maintenance and handling. Mentoring of the students becomes easier for the teachers.

Stu-ins utility management system (sims) is application software which is deliberated to begin with exchange of information in a secure manner to affiliate with students and teachers. The system has come up with many functionalities for educational institutions to help the students to manage their studies and teachers to retrieve the statistics of their students. Student utility management system is an application software and which has intention to begin a conductive and direct interchanging the statistics in a secure platform to coalesce with students, faculties, and the college/school administration. At first, it’s going to retrieve all the general details of the student (like register number, semester, date-of-birth, gender, parent phone number, address, parent name, etc.) Invade to the system by the faculties. All these particulars will be stored in the database. This sums application tool is a handy tool to use in schools, colleges, universities, and any other educational institutions. It can be customized as per their needs. This application tool provides all the basic and general tools that are most commonly needed for the students for an effective learning process (like calculator, web browser, notepad, pdf file explorer, etc.) And also provided with the notes for an additional reference. In this application tool the teacher plays an administrative role, they have the complete rights over their students, they can manage their students in such a way that they can decide which all the application does the student can use, means the teachers can activate/deactivate certain application (tools) for a particular student based on their performance in the academics. Not only this concern about the studies but also provided with some mind refreshing application like mini educational games, which creates positive attitude towards learning. In this way our tool overcomes the all kinds of issues which is been faced from past till now.

**2.2** **INTRODUCTION TO VISUAL STUDIO 2019**

Microsoft Visual Studio is an integrated development environment [IDE] from Microsoft. It is used to develop computer programs as well websites, webapps, webservices, and mobile apps. Visual studio uses Microsoft Software development platform such as windows API, windows Forms, windows presentation foundation, windows and Microsoft Silverlight. It can provide both native and manage code. Visual Studio includes a code editor supporting intelligence [The code completion component] as well as code refactoring. The integrated debugger works both as source level debugger and machine level debugger, other built in tools include code profiles, designer for GUI applications, web designer, class designer and database scheme designer.

Visual Studio supports 36 different programming languages and allows the code editor and debugger support nearly any programming languages provided a language specific services exit in built-in language include C++, Visual basic, **.Net**, C#, F#, JavaScript, Typescript, xml, xslt and css.Visual studio 2019.

**Improved search**

* Quick launch, new search experience faster and effective search result appear dynamically and result can often include key board shortcuts for command.
* Visual Studio 2019 is used to develop Android, iOS, and Windows mobile applications. Using C#, JavaScript and C++ it can build the mobile apps. It has high code reuse and native capabilities. We can test developed mobile apps easily.
* We can install it in a faster way compared to previous Visual Studio versions. We can install it in a minimum of four minutes. It is a lightweight component.
* Visual Studio enhancements are offered for building **.**ASP .Net web applications.
* For C#, new C# 8.0 features include recursive pattern matching, for digging into the structure of an object, and switch expressions, a concise version of switch statements.

**Some of the new features in visual studio 2019:**

1. Refactoring.
2. Intellicode.
3. Code clean-up.
4. Per-monitor aware [PMA]
5. Test explorer.
6. **.**Net core.
7. Collaborate.
8. Git-first work flow.
9. Integrated code reviews.
10. Search while debugging.

**INTRODUCTION TO .NET FRAMEWORK**

**.**Net framework [pronounced as “Dot net”] is a software framework develops by Microsoft that runs primarily on Microsoft windows. It includes a large class library called framework class library and provides language interoperability across several programming language. Programs written for **.**Net framework execute in a software environment [in contrast to hardware environment] named common language runtime. As such, computer code written using **.**Net framework is called ‘managed code’. Framework class library and common language runtime constitute the **.**Net framework.

Programmers produce by the software by combining their source code with **.**net framework and other libraries is intended to be used by newest application created for windows platform. Microsoft also produces an integrated development environment [IDE]for **.**Net framework called Visual Studio.

**.**Net framework began as propriety software, although the firm worked to standardize the software stack almost immediately. There is various implement of **.**Net. Each implementation allows **.**Net code to execute in difference places the Linus, macOS, windows IOS android etc...

**ARCHITECTURE OF .NET FRAMEWORK:**

The two major components of **.**Net framework are:

1. **The common language runtime [CLR]:**

Its execution the engine that handles running applications. It provides services like thread management, garbage collection, type-safety, exception handling and etc...

1. **The class library:**

It provides a set of API’s and types for common functionality. It provides types of string, dates, numbers etc...

**FEATURES OF .NET FRAMEWORK:**

* **.**Net applications are written in the C#, F# or visual basic programming language.
* Code is compiled into language – agonistic common intermediate language [CIL].
* **.**Net framework is used to create and run software applications.
* **.**Net Apps can run on many operating system using different implementations of **.**Net.
* **.**Net framework is used to running **.**Net on windows.
* Asynchronous Programming.
* Security.

**INTRODUCTION TO CSHARP[C#]**

CSharp [C#] is a modern, general purpose, object-oriented programming developed by Microsoft and approved by European computer manufacture association [ECMA]and international standards organizations [ISO]. C# was developed by Anders Hejlsberg and His team during the development of **.**Net framework.

C# is designed for common language infrastructure [CLI] which consists of executable code and runtime environment that allows use of various high-level languages on different computer platforms and architectures. Although C# contracts closely follow traditional high- level languages C and C++ and being an object-oriented programming language. It has strong resembled with Java, it has numerous strong programming features that make it end earing to a number of programmers worldwide.

* **The following reasons make C# widely professional language are;**
* It is easy to learn.
* It is infrastructure.
* It is produced efficient programs.
* It can be complied on variety on computer platforms.
* It is part of **.**Net framework.
* **Important Features of C#:**
* Automatic garbage collection.
* Boolean conditions.
* Standard library.
* Assembly versioning.
* Integrated with windows.
* Indexers.
* Conditional compilation
* Easy-to-use generics.
* Structured programming language.
* **Integrated Development Environment [IDE]for C#**

Microsoft provides the following development tools for C# programming are:

* Visual studio 2010.
* Visual C# 2010 express.
* Visual web developer.
* **C# is used for:**
* Mobile applications.
* Desktop applications.
* Web applications.
* Web services.
* Games.
* Database applications.

C# is intended to be suitable for writing applications for both hosted and embedded systems, ranging from the very large that use sophisticated operating system, down to very small having dedicated functions.

Although C# applications are intended to be economically with regard to memory and processing power requirement.

**INTRODUCTION TO MICROSOFT SQL SERVER 2017**

Microsoft SQL server is a relational database management system [RDMS] develop by Microsoft. This product is built for basic function of storing retrieving data as required by other applications. It can be run on either on same computer or on another computer or an network. It is a software developed by Microsoft which is implemented from the specification of RDBMS.

It is platform dependent, it as both GUI and common based software and supports SQL language which is an IBM product, non-procedural, common database and case intensive language.

* **USAGE OF SQL SERVER:**
* To create of SQL server.
* To maintain databases.
* To analysis the data through SQL server analysis services [SAS].
* To generate reports through SQL server reporting services [SRS].
* **MICROSOFT SQL SERVER COMPONENTS:**

1. **Workstation: -** They are installed in every device SQL server operating machine. There is just interface to interact with server.
2. **Server components: -** They are installed in centralized server. There are providing the services like SQL server, SQL agent server so on.

**MICROSOFT SQL SERVER 2017:**

SQL server 2017 is a powerful tool for training information into opportunity. Industry leading support for XML, enhanced tools for system management, training and expectation scalability and reliability make SQL server 2017 the best choice for enterprise.

### Prior to the 2017 edition, SQL Server was only available for Windows. One of the biggest changes in SQL Server 2017 is that it is now available on Linux and Dockers containers. This means you can also run SQL Server on a Mac. Prior to the 2017 edition, SQL Server was only available for Windows. One of the biggest changes in SQL Server 2017 is that it is now available on Linux and Dockers containers. This means you can also run SQL Server on a Mac.

### SQL Server is a client/server database management system (DBMS). This means that you can have many different "client" machines all connecting to SQL Server at the same time. And each one of those client machines could be connecting via a different tool.

* **FEATURES OF MICROSOFT SQL SERVER 2017:**
* Internet Integration.
* Scalability and Availability.
* Replication.
* Database tuning advisor.
* Memory – optimized objects enhancements.

### Monitoring the databases for optimal query performance, creating and maintaining required indexes, and dropping rarely-used, unused, or expensive indexes is a common database administration task. SQL Server 2017 can now assist database administrators in performing these routine operations by identifying problematic query execution plans and fixing SQL plan performance problems. Automatic tuning begins with continuously monitoring the database, and learning about the workload that it serves.

* **Some typical database administration and programming tasks could include:**
  + Create & maintain databases
  + Create & maintain tables
  + Create & maintain other database objects such as stored procedures, views,
  + Create & maintain and schedule data backups
  + Import/export data
  + Replication
  + Create & maintain users, roles
  + Optimization tasks

SQL Server also includes optional services that you can choose whether or not to install, depending on your needs. For example, there's Reporting Services, Analysis Services, Integration Services, R Services, etc. However, the availability of these services may depend on your platform (most of these weren't available in the first release of SQL Server 2017 for Linux).

**CHAPTER 3**

**SOFTWARE and HARDWARE REQUIREMENTS**

**3.1 FUNCTIONAL REQUIREMENTS**

A software requirements specification (SRS) is a description of a [software system](https://en.wikipedia.org/wiki/Software_system) to be [developed](https://en.wikipedia.org/wiki/Software_development). It is modelled after [business requirements specification](https://en.wikipedia.org/wiki/Business_requirements) [(CONOPS)](https://en.wikipedia.org/wiki/Concept_of_operations), also known as a [stakeholder requirements specification (SRS)](https://en.wikipedia.org/w/index.php?title=Stakeholder_requirements_specification_(StRS)&action=edit&redlink=1) .  The software requirements specification lays out [functional](https://en.wikipedia.org/wiki/Functional_requirement) and [non-functional requirements](https://en.wikipedia.org/wiki/Non-functional_requirements), and it may include a set of [use cases](https://en.wikipedia.org/wiki/Use_case) that describe user interactions that the software must provide to the user for perfect interaction.

Software requirements specification establishes the basis for an agreement between customers and contractors or suppliers on how the software product should function (in a market-driven project, these roles may be played by the marketing and development divisions). Software requirements specification is a rigorous assessment of requirements before the more specific system design stages, and its goal is to reduce later redesign. It should also provide a realistic basis for estimating product costs, risks, and schedules.[[1]](https://en.wikipedia.org/wiki/Software_requirements_specification#cite_note-1) Used appropriately, software requirements specifications can help prevent software project failure.

The software requirements specification document lists sufficient and necessary requirements for the project development. To derive the requirements, the developer needs to have clear and thorough understanding of the products under development. This is achieved through detailed and continuous communications with the project team and customer throughout the software development process.

The SRS may be one of a contract's [deliverable](https://en.wikipedia.org/wiki/Deliverable) [data item descriptions](https://en.wikipedia.org/wiki/Data_item_descriptions) or have other forms of organizationally-mandated content.

Typically a SRS is written by a [technical writer](https://en.wikipedia.org/wiki/Technical_writer), a [systems architect](https://en.wikipedia.org/wiki/Systems_architect), or a [software programmer](https://en.wikipedia.org/wiki/Software_programmer).

The specific goals of the SRS are as follows:

* Facilitating reviews
* Describing the scope of work
* Providing a reference to software designers (i.e. navigation aids, document structure)
* Providing a framework for testing primary and secondary use cases
* Including [features](https://en.wikipedia.org/wiki/Software_feature) to customer requirements
* Providing a platform for ongoing refinement (via incomplete specs or questions)

**3.2 Hardware and Software Requirements:**

**Hardware requirements:**

* RAM : 1 Gb or Above.
* Hard disk : 60Gb or Above
* Processor : Intel or AMD
* System type : 64-bit operating system

**Software requirements:**

* Front End : Microsoft visual studio 2019
* Back End : Microsoft SQL server 2017
* Tools : .Net core
* Operating System : Windows 8.1or Above

**CHAPTER 4**

**SYSTEM STUDY**

**4.1.1 Existing system**

System analysis is the process by which an overall image of the final system to be implemented is obtained. It helps us make a guess of how the system will look. The system will involve the process of diagnosing, interpreting and helps to propose the new system. The system analysis gives an idea of how the system will process. System study helps us to make a thorough study of the existing system. It helps us to identify the loopholes in the existing system and to identify the problems that are being faced by existing system. With the help of system study, it is possible for us to make improvements in the areas wherever it is required in the existing system. Before developing this application most of activities were done manually which take more time and also take more manpower. These problems overcome when we will develop the system.

**4.1.2 Feasibility study**

We have Come across this idea of implementing this application for both Students and Institution for the better Coordination between them and more both of them will have their own kind of Advantage like The Students can Utilize the Tools for the Betterment of their Knowledge and the skills and also the Teachers will have the Advantage of knowing their Students Actions, Performance, Interests and more as Such. This idea will help them out in all the aspects.

**4.1.3 Technical feasibility**

This assessment is based on an outline design of system requirements, to determine whether the company has the technical expertise to handle completion of the project. At this level, the concern is whether the proposal is both technically and legally feasible. The technical feasibility assessment is focused on gaining an understanding of the present technical resources of the organization and their applicability to the expected needs of the proposed system. It is an evaluation of the hardware and software and how it meets the need of the proposed system.

**4.1.4 Economic feasibility**

The purpose of the economic feasibility assessment is to determine the positive economic benefits to the organization that the proposed system will provide. It includes identification of all the benefits expected. This assessment typically involves a cost/ benefits analysis.

**4.1.5 Legal feasibility**

Determines whether the proposed system conflicts with legal requirements, e.g. a data processing system must compile with the local data protection regulations and if the proposed venture is acceptable.

**4.1.6 Operational Feasibility**

Operational feasibility is a measure of how well a proposed system solves the problems, and takes advantage of the opportunities identified during scope definition and how it satisfies the requirements identified in the requirements analysis phase of system development. To ensure success, desired operational outcomes must be imparted during design and development.

These include such design-dependent parameters such as reliability, maintainability, supportability, usability, disposability, sustainability, affordability and others. These parameters are required to be considered at the early stages of design if desired operational behaviours are to be realized.

**4.1.7 Schedule Feasibility**

A project will fail if it takes too long to be completed before it is useful. Typically, this means estimating how long the system will take to develop, and if it can be completed in a given time period using some methods like payback period. Schedule feasibility is a measure of how reasonable the project timetable is given.

**4.2 System design**

**4.2.1 Introduction**

System design is the process of defining the architecture, modules, interfaces and data for a system to satisfy specified requirements. Systems design could be seen as the application systems theory to product development. System design is the phase that bridges the gap between problem domain and the existing system in a manageable way. System design is a phase where the SRS document is converted into a format that can be implemented and decides how the system will operate.

**4.2.2 Use case Diagram**

A **use case diagram** at its simplest is a representation of a user's interaction with the system that shows the relationship between the user and the different [use cases](https://en.wikipedia.org/wiki/Use_case) in which the user is involved. A use case diagram can identify the different types of users of a system and the different use cases and will often be accompanied by other types of diagrams as well. The use cases are represented by either circles or ellipses.

## **Purpose of Use Case Diagrams**

The purpose of use case diagram is to capture the dynamic aspect of a system. However, this definition is too generic to describe the purpose, as other four diagrams (activity, sequence, collaboration, and State chart) also have the same purpose. We will look into some specific purpose, which will distinguish it from other four diagrams.

Use case diagrams are used to gather the requirements of a system including internal and external influences. These requirements are mostly design requirements. Hence, when a system is analysed to gather its functionalities, use cases are prepared and actors are identified.

When the initial task is complete, use case diagrams are modelled to present the outside view.

In brief, the purposes of use case diagrams can be said to be as follows −

* Used to gather the requirements of a system.
* Used to get an outside view of a system.
* Identify the external and internal factors influencing the system.
* Show the interaction among the requirements are actors.

## Use case diagram components

* **Actors:** The users that interact with a system. An actor can be a person, an organization, or an outside system that interacts with your application or system. They must be external objects that produce or consume data.
* **System:** A specific sequence of actions and interactions between actors and the system. A system may also be referred to as a scenario.
* **Goals:** The end result of most use cases. A successful diagram should describe the activities and variants used to reach the goal.

student

teacher

**4.3 E-R DIAGRAM:**

An Entity–relationship model (ER model) describes the structure of a database with the help of a diagram, which is known as Entity Relationship Diagram (ER Diagram). An ER model is a design or blueprint of a database that can later be implemented as a database. The main components of E-R model are: entity set and relationship set.

An ER diagram shows the relationship among entity sets. An entity set is a group of similar entities and these entities can have attributes. In terms of DBMS, an entity is a table or attribute of a table in database, so by showing relationship among tables and their attributes, ER diagram shows the complete logical structure of a database.

* **Advantages of ER Model**

1. Conceptually it is very simple: ER model is very simple because if we know relationship between entities and attributes, then we can easily draw an ER diagram
2. Better visual representation: ER model is a diagrammatic representation of any logical structure of database. By seeing ER diagram, we can easily understand relationship among entities and relationship
3. Effective communication tool: It is an effective communication tool for database designer.
4. Highly integrated with relational model: ER model can be easily converted into relational model by simply converting ER model into tables.
5. Easy conversion to any data model: ER model can be easily converted into another data model like hierarchical data model, network data model and so on.

* **Disadvantages of ER Model**

1. Limited constraints and specification
2. Loss of information content: Some information be lost or hidden in ER model
3. Limited relationship representation: ER model represents limited relationship as compared to another data models like relational model etc.
4. No representation of data manipulation: It is difficult to show data manipulation in ER model.
5. Popular for high level design: ER model is very popular for designing high level designing.

**Design:**

Signup

Uses tools

Tools

Ena/dis

Studies in

in

Enabling/Disabling

Student Cgpa

Cgpa update

Standard

**CHAPTER 5**

**IMPLEMENTATION**

**5.1 Project Analysis**

This application consists the following modules:

* Homepage Module
* Student Login module
* Essential Tool module (Browser, Calculator, Game, Document viewer)
* My Profile module
* Feedback module
* Administrator Login Module
* Approve Student
* Documents Manager (upload essential Documents to students)
* Student statistics module (total count of usage of tools)
* Student Confidential data (contains student’s essential information)
* Student Policy module (enable/disable tools according to the usage)
* Manage Student’s (delete certain student from the application)
* Update CGPA (updating certain student CGPA marks)
* Update Alerts (update notifications to students)
* Essential Tool module (Browser, Calculator, Game)
* Inbox module (contains feedback reports from the students)

**Homepage Module**

Homepage Module is start-up module of the application.

**ADMIN MODULE:**

The Admin module will be used by the administrator of this application, Admin has the complete access of whole application, he maintains the application with secure and gathering the necessary resources

**User Login Module**

After the display of Homepage module then they are entered to this login page to login their account. If the user already has account then they can directly login by entering their username and password, or else if they don’t have account and they are new to this application means then they can create their account by clicking signup link in the login form for the new account. Admin is also logged in from the login page.

**5.2 Coding**

**Sign up module**

The Sign-Up Module is one the First Module which helps the New users Create their New Account in the Application and to access over the Dashboard with all the Features.

using System;

using System.Collections.Generic;

using System.ComponentModel;

using System.Data;

using System.Drawing;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

using System.Windows.Forms;

using System.IO;

using System.Data.SqlClient;

namespace StdUtilMgmt\_Beta

{

public partial class SignUpForm : Form

{

public SignUpForm()

{

InitializeComponent();

imgloc.Visible = false;

imgloc.Text = "";

}

private void Sign\_up\_btn\_Click(object sender, EventArgs e)

{

bool checkuser = checkUser();

if(checkuser == true)

{

MessageBox.Show("User Exist");

}

else if(Name\_textBox.Text==""||UserID\_textbox.Text==""||Password\_textBox.Text==""||PhNo\_textBox.Text==""||Stndcmb.Text=="")

{

MessageBox.Show("Please enter the details");

}

else if (PhNo\_textBox.Text.Length != 10)

{

MessageBox.Show("Please Enter 10 Digit Phone Number");

}

else if(imgloc.Text=="")

{

MessageBox.Show("Please upload the image");

}

else

{

signUp();

}

}

public void signUp()

{

int b=0,c=0,p=0,g=0;

string q= "select \* from policyTable";

string name = Name\_textBox.Text;

string gender = "";

SqlConnection conn = null;

try

{

conn = sqlConnect.GetSqlConnect();

conn.Open();

SqlCommand cmd = new SqlCommand(q, conn);

cmd.ExecuteNonQuery();

SqlDataAdapter sda = new SqlDataAdapter(cmd);

DataTable dt = new DataTable();

sda.Fill(dt);

if (dt.Rows.Count > 0)

{

if (dt.Rows[0][0].ToString() == "1")

{

b = 1;

}

else

{

b = 0;

}

if (dt.Rows[0][1].ToString() == "1")

{

c = 1;

}

else

{

c = 0;

}

if (dt.Rows[0][2].ToString() == "1")

{

p = 1;

}

else

{

p = 0;

}

if (dt.Rows[0][3].ToString() == "1")

{

g = 1;

}

else

{

g = 0;

}

}

else

{

MessageBox.Show("Check user id and password");

}

}

catch (Exception ex)

{

MessageBox.Show(ex.Message);

}

conn.Close();

if (Male\_radioButton.Checked)

{

gender = "Male";

}

else if(Female\_radioButton.Checked)

{

gender = "Female";

}

string father = FatherName\_textBox.Text;

string mother = MotherName\_textBox.Text;

string phone = PhNo\_textBox.Text;

string userid = UserID\_textbox.Text;

string password = Password\_textBox.Text;

string standard = Stndcmb.Text;

Random r = new Random();

int rc=r.Next(10000, 99999);

string query = "insert into Login (UserID, Name, DOB, Gender, Father, Mother, Phone, Password, Standard, BrowserCounter, CalculatorCounter, PdfReaderCounter, GamesCounter, BrowserA, CalculatorA, PdfReaderA, GamesA,RecoveryCode, Astatus,Picture) values (@UserID, @Name, '" + dateTimePicker1.Text.ToString() + " ', @Gender, @Father, @Mother, @Phone, @Password, @Standard,0,0,0,0, @BrowserA, @CalculatorA, @PdfReaderA, @GamesA, @RecoveryCode, 0, @Picture)";

using (Stream stream = File.OpenRead(imgloc.Text))

{

byte[] files = new byte[stream.Length];

stream.Read(files, 0, files.Length);

conn = null;

try

{

conn = sqlConnect.GetSqlConnect();

conn.Open();

SqlCommand cmd = new SqlCommand(query, conn);

cmd.Parameters.AddWithValue("@USerID", userid);

cmd.Parameters.AddWithValue("@Name", name);

cmd.Parameters.AddWithValue("@Gender", gender);

cmd.Parameters.AddWithValue("@Father", father);

cmd.Parameters.AddWithValue("@Mother", mother);

cmd.Parameters.AddWithValue("@Phone", phone);

cmd.Parameters.AddWithValue("@Password", password);

cmd.Parameters.AddWithValue("@Standard", standard);

cmd.Parameters.AddWithValue("@BrowserA", b);

cmd.Parameters.AddWithValue("@CalculatorA", c);

cmd.Parameters.AddWithValue("@PdfReaderA", p);

cmd.Parameters.AddWithValue("@GamesA", g);

cmd.Parameters.AddWithValue("@RecoveryCode", rc);

cmd.Parameters.AddWithValue("@Picture", files);

cmd.ExecuteNonQuery();

MessageBox.Show(rc+" is Your Recovery Code, Use it when you Forget the Credentials");

conn.Close();

cgpains();

}

catch (Exception ex)

{

MessageBox.Show(ex.Message);

conn.Close();

}

}

imgloc.Text = "";

}

public bool checkUser()

{

string user = UserID\_textbox.Text;

string query = "select \* from Login WHERE UserID = @UserID";

bool check = true;

SqlConnection conn = null;

try

{

conn = sqlConnect.GetSqlConnect();

conn.Open();

SqlCommand cmd = new SqlCommand(query, conn);

cmd.Parameters.AddWithValue("@UserID", user);

cmd.ExecuteNonQuery();

SqlDataAdapter sda = new SqlDataAdapter(cmd);

DataTable dt = new DataTable();

sda.Fill(dt);

if(dt.Rows.Count > 0)

{

check = true;

conn.Close();

}

else

{

check = false;

conn.Close();

}

}

catch(Exception ex)

{

MessageBox.Show(ex.Message);

conn.Close();

}

return check;

}

public void cgpains()

{

string query= "insert into CGPATable (UserID, CGPA) values (@UserID, @CGPA)";

string userid = UserID\_textbox.Text;

string cgpa = "Not Updated";

SqlConnection conn = null;

try

{

conn = sqlConnect.GetSqlConnect();

conn.Open();

SqlCommand cmd = new SqlCommand(query, conn);

cmd.Parameters.AddWithValue("@USerID", userid);

cmd.Parameters.AddWithValue("@CGPA",cgpa);

cmd.ExecuteNonQuery();

conn.Close();

}

catch (Exception ex)

{

MessageBox.Show(ex.Message);

conn.Close();

}

}

private void Goto\_Login\_btn\_Click(object sender, EventArgs e)

{

LoginForm f = new LoginForm();

this.Hide();

f.Show();

}

private void button1\_Click(object sender, EventArgs e)

{

OpenFileDialog dlg = new OpenFileDialog();

dlg.ShowDialog();

imgloc.Text = dlg.FileName;

imgloc.Visible = true;

}

}

}

**Login module:**

using System;

using System.Collections.Generic;

using System.ComponentModel;

using System.Data;

using System.Drawing;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

using System.Windows.Forms;

using System.Data.SqlClient;

using System.IO;

namespace StdUtilMgmt\_Beta

{

public partial class LoginForm : Form

{

public LoginForm()

{

InitializeComponent();

txtPassword.UseSystemPasswordChar = true;

}

private void Form1\_Load(object sender, EventArgs e)

{

}

private void button1\_Click(object sender, EventArgs e)

{

SignUpForm f = new SignUpForm();

f.Show();

this.Hide();

}

private void Login\_btn\_Click(object sender, EventArgs e)

{

if(txtUserID.Text=="a" && txtPassword.Text == "a")

{

TeachersDashboardForm f = new TeachersDashboardForm();

this.Hide();

f.Show();

}

else

{

Login();

}

}

public void Login()

{

string user = txtUserID.Text;

string password = txtPassword.Text;

string query = "select \* from Login WHERE UserID = @UserID AND Password = @Password";

Global.user = txtUserID.Text;

SqlConnection conn = null;

try

{

conn = sqlConnect.GetSqlConnect();

conn.Open();

SqlCommand cmd = new SqlCommand(query, conn);

cmd.Parameters.AddWithValue("@UserID", user);

cmd.Parameters.AddWithValue("@Password", password);

cmd.ExecuteNonQuery();

SqlDataAdapter sda = new SqlDataAdapter(cmd);

DataTable dt = new DataTable();

sda.Fill(dt);

if (dt.Rows.Count > 0)

{

if (dt.Rows[0][19].ToString()=="1")

{

Global.name = dt.Rows[0][1].ToString();

Global.user = dt.Rows[0][0].ToString();

Global.dob = dt.Rows[0][2].ToString();

Global.Father = dt.Rows[0][4].ToString();

Global.Mother = dt.Rows[0][5].ToString();

Global.Phone = dt.Rows[0][6].ToString();

Global.Regno = int.Parse(dt.Rows[0][17].ToString());

Global.std= dt.Rows[0][8].ToString();

conn.Close();

StudendDashboardForm f = new StudendDashboardForm();

this.Hide();

f.Show();

// saveDetails(dt);

}

else

{

MessageBox.Show("Your Account is not Yet Approved! Please wait for some Time");

conn.Close();

}

}

else

{

MessageBox.Show("Check user id and password");

}

}

catch (Exception ex)

{

MessageBox.Show(ex.Message);

conn.Close();

}

conn.Close();

}

public void saveDetails(DataTable dt)

{

}

private void button2\_Click(object sender, EventArgs e)

{

if (txtPassword.UseSystemPasswordChar == true)

{

txtPassword.UseSystemPasswordChar = false;

}

else

{

txtPassword.UseSystemPasswordChar = true;

}

}

private void label3\_Click(object sender, EventArgs e)

{

RecoveryForm f = new RecoveryForm();

f.Show();

}

private void txtPassword\_TextChanged(object sender, EventArgs e)

{

}

}

}

**Student dashboard module:**

using System;

using System.Collections.Generic;

using System.ComponentModel;

using System.Data;

using System.Drawing;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

using System.Windows.Forms;

using System.IO;

using System.Data.SqlClient;

namespace StdUtilMgmt\_Beta

{

public partial class StudendDashboardForm : Form

{

string but = "";

public StudendDashboardForm()

{

InitializeComponent();

label1.Text = "Welcome "+Global.name;

EnableButton();

timer1.Start();

}

public void EnableButton()

{

string query = "select BrowserA,CalculatorA,PdfReaderA,GamesA from Login WHERE UserID=@UserID";

SqlConnection conn = null;

try

{

conn = sqlConnect.GetSqlConnect();

conn.Open();

SqlCommand cmd = new SqlCommand(query, conn);

cmd.Parameters.AddWithValue("@UserID", Global.user);

cmd.ExecuteNonQuery();

SqlDataAdapter sda = new SqlDataAdapter(cmd);

DataTable dt = new DataTable();

sda.Fill(dt);

if (dt.Rows.Count > 0)

{

if(dt.Rows[0][0].ToString() == "1")

{

Browser\_btn.Enabled = true;

}

else

{

Browser\_btn.Enabled = false;

}

if (dt.Rows[0][1].ToString() == "1")

{

Calculator\_btn.Enabled = true;

}

else

{

Calculator\_btn.Enabled = false;

}

if (dt.Rows[0][2].ToString() == "1")

{

PDF\_Reader\_btn.Enabled = true;

}

else

{

PDF\_Reader\_btn.Enabled = false;

}

if (dt.Rows[0][3].ToString() == "1")

{

Games\_btn.Enabled = true;

}

else

{

Games\_btn.Enabled = false;

}

}

else

{

MessageBox.Show("Check user id and password");

}

}

catch (Exception ex)

{

MessageBox.Show(ex.Message);

}

conn.Close();

}

private void Calculator\_btn\_Click(object sender, EventArgs e)

{

but = "CalculatorCounter";

increment();

CalculatorForm f = new CalculatorForm();

f.Show();

}

public void noname()

{

Browser\_btn.Enabled = false;

}

private void label1\_Click(object sender, EventArgs e)

{

}

private void StudendDashboardForm\_Load(object sender, EventArgs e)

{

}

private void Logout\_btn\_Click(object sender, EventArgs e)

{

LoginForm f = new LoginForm();

this.Hide();

f.Show();

}

private void Browser\_btn\_Click(object sender, EventArgs e)

{

but = "BrowserCounter";

increment();

BrowserForm f = new BrowserForm();

f.Show();

}

public void increment()

{

try

{

string query = "select " + but + " from Login WHERE UserID = @UserID";

SqlConnection conn = null;

conn = sqlConnect.GetSqlConnect();

conn.Open();

SqlCommand cmd = new SqlCommand(query, conn);

cmd.Parameters.AddWithValue("@UserID", Global.user);

cmd.Parameters.AddWithValue("@but", but);

cmd.ExecuteNonQuery();

SqlDataAdapter sda = new SqlDataAdapter(cmd);

DataTable dt = new DataTable();

sda.Fill(dt);

int count = int.Parse(dt.Rows[0][0].ToString());

count++;

conn.Close();

query = "UPDATE Login SET " + but + " = '" + count + "' WHERE UserID = @UserID";

conn = null;

conn = sqlConnect.GetSqlConnect();

conn.Open();

cmd = new SqlCommand(query, conn);

cmd.Parameters.AddWithValue("@UserID", Global.user);

cmd.ExecuteNonQuery();

conn.Close();

}

catch(Exception ex)

{

MessageBox.Show(ex.Message);

}

}

private void PDF\_Reader\_btn\_Click(object sender, EventArgs e)

{

but = "PdfReaderCounter";

increment();

Documentviewer f = new Documentviewer();

f.Show();

}

private void Games\_btn\_Click(object sender, EventArgs e)

{

but = "GamesCounter";

increment();

GamesForm f = new GamesForm();

f.Show();

}

private void timer1\_Tick(object sender, EventArgs e)

{

DateTime dtv = DateTime.Now;

this.Time\_lbl.Text = dtv.ToString();

}

private void Time\_lbl\_Click(object sender, EventArgs e)

{

}

private void button1\_Click(object sender, EventArgs e)

{

SdntPrblmReportFrom f = new SdntPrblmReportFrom();

this.Hide();

f.Show();

}

private void button2\_Click(object sender, EventArgs e)

{

MyProfileForm f = new MyProfileForm();

f.Show();

this.Hide();

}

}

}

**Update notification module:**

using System;

using System.Collections.Generic;

using System.ComponentModel;

using System.Data;

using System.Drawing;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

using System.Windows.Forms;

using System.Data.SqlClient;

namespace StdUtilMgmt\_Beta

{

public partial class AlertsUpdateForm : Form

{

public AlertsUpdateForm()

{

InitializeComponent();

}

private void UpdateAlert\_btn\_Click(object sender, EventArgs e)

{

if (string.IsNullOrEmpty(textBox1.Text))

{

SqlConnection conn = null;

string query = "Update AlertTable set AlertText='No Alerts at the Moment!'";

conn = sqlConnect.GetSqlConnect();

conn.Open();

SqlCommand cmd = new SqlCommand(query, conn);

cmd.ExecuteNonQuery();

conn.Close();

textBox1.Text = "";

}

else

{

SqlConnection conn = null;

string query = "Update AlertTable set AlertText=@Message";

conn = sqlConnect.GetSqlConnect();

conn.Open();

SqlCommand cmd = new SqlCommand(query, conn);

cmd.Parameters.AddWithValue("@Message", textBox1.Text);

cmd.ExecuteNonQuery();

conn.Close();

MessageBox.Show("Alert Updated!");

textBox1.Text = "";

}

}

private void RemoveAlert\_btn\_Click(object sender, EventArgs e)

{

SqlConnection conn = null;

string query = "Update AlertTable set AlertText='No Alerts at the Moment!'";

conn = sqlConnect.GetSqlConnect();

conn.Open();

SqlCommand cmd = new SqlCommand(query, conn);

cmd.ExecuteNonQuery();

conn.Close();

MessageBox.Show("Alert Removed!");

textBox1.Text = "";

}

private void AlertsUpdateForm\_Load(object sender, EventArgs e)

{

}

}

}

**CHAPTER 6**

**TESTING**

Testing should be done through the implementation process. Even before and application is installed; it makes sense to verify that the basic platform is capable of achieving its design capabilities. System testing is a critical process. Testing is a process of executing a program with the explicit intention of finding errors that is making the program fail. This helps in finding the bottle neck in the system. Executing a program in a stimulated environment performs testing. The feedback from testing phase generally produces changes in the software to deal with errors and failures that are uncovered.

**BLACK BOX TESTING:**

In black box testing or functional testing test cases are decided. Test cases are decided on the basis of requirements or specifications of the program or module.

Black box testing is done in the project to remove errors:

* Incorrect or missing function
* Interface errors.
* Errors in data structure or external database access.
* Behavioural or performance

**WHITE BOX** **TESTING:**

The White box testing or structural testing performs close operation of procedural details. They test the software logical path by having test cases exercising specific sets of condition and loops.

White box testing is done in the project to remove errors:

* All modules path have been exercised at least once.
* Executed all loops at their boundaries and within their operational bounds.

**Integration Testing**

This testing is done to tackle problems of interface that is putting all interfaces together. When the separate modules are put together in an integrated manner, this testing is performed. This testing is systematic technique. This testing is performed to check the data should not be lost across an interface.

The objective is to take a unit testing module and build a program structure that has been dedicated by design.

**Regression**

Regression was done to ensure proper working of each module with the whole system. Each module is embedded in the system and the whole tested for integrity.

**8.5 System Testing**

System testing is done when the entire system has been fully integrated. The purpose of the system testing is to test how the different modules interact with each other and whether the system provides the functionality that was expected. Software testing is an investigation conducted to provide stakeholders with information about the quality of the product or service under test. Software testing also provides an objective , independent view of the software to allow the business to appreciate and understand the risks of software implementation. Test techniques include ,but are not limited to , the process of executing a program or application with the intent of finding software bugs.

Software testing can also be stated as the process of validating and verifying that a software program:

* Meets the business and technical requirements that guided its design and development.
* Works as expected.
* Can be implemented with the same characteristics.

**Component Testing**

It focuses on verification efforts of the smallest grid of software designing that is a software component or module is tested. This testing is done at the coding phase. This testing uses procedural design as guide to test major control path and uncovers errors within the module boundary.

Following test were performed during component test:

* Module Interface Test : Module Interface was tested to ensure information flow in and out of the program unit.
* Local Data Structure Test : Local data structure were tested to make surely that data store temporarily maintained their integrity during all steps in algorithm execution.
* Boundary Condition Testing : Boundary condition were tested to male sure that the modules operate properly at the boundaries.

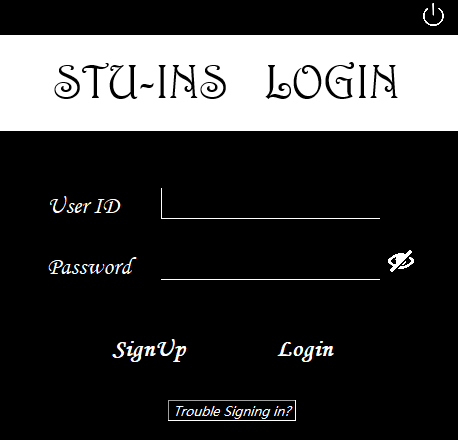
**TEST CASES OF PROJECT**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Sl**  **no** | **ACTION** | **INPUT** | **EXPECTED**  **OUTPUT** | **ACTUAL**  **RESULT** | **TEST**  **COMMAND** |
| 1 | Launch website | Login page | Homepage | Homepage | pass |
| 2 | Enter the valid admin login module | Correct Userid:  a  correct Password:  a | Should display teacher dashboard | Displayed Teacher dashboard | Pass |
| 3 | Enter the invalid admin login module | Incorrect Username:  a  incorrect Password:  12345 | Should display Check userid or password | Displayed Check userid or password | Pass |
| 4 | Enter the null value admin login module | Username:  Password: | Should display Check username and password | Displayed Check username and password | Pass |
| 5 | Enter the valid user login module | Correct Userid:  Shashank1  Correct Password:  1234 | Should display student dashboard | Displayed student dashboard | Pass |
| 6 | Enter the Invalid user login module | incorrect Userid:  Shashank1  Incorrect Password:  12345 | Should display Check userid and password | Displayed Check userid and password | Pass |
| 7 | Enter the null value user login module | Userid:  Password: | Should display Check userid and password | Displayed Check userid and password | Pass |
| 8 | Fill all the details in signup module | Enter certain details and userid | Random recovery code should be generated | Random recovery code generated | Pass |
| 9 | Fill only some details in signup module | Fill only date of birth, phone no, userid | Should display Please enter the details | Displayed Please enter the details | Pass |
| 10 | Enter exist userid in signup module | Userid:shashank1  Password:1234 | Should display Userid exist | Displayed Userid exist | Pass |

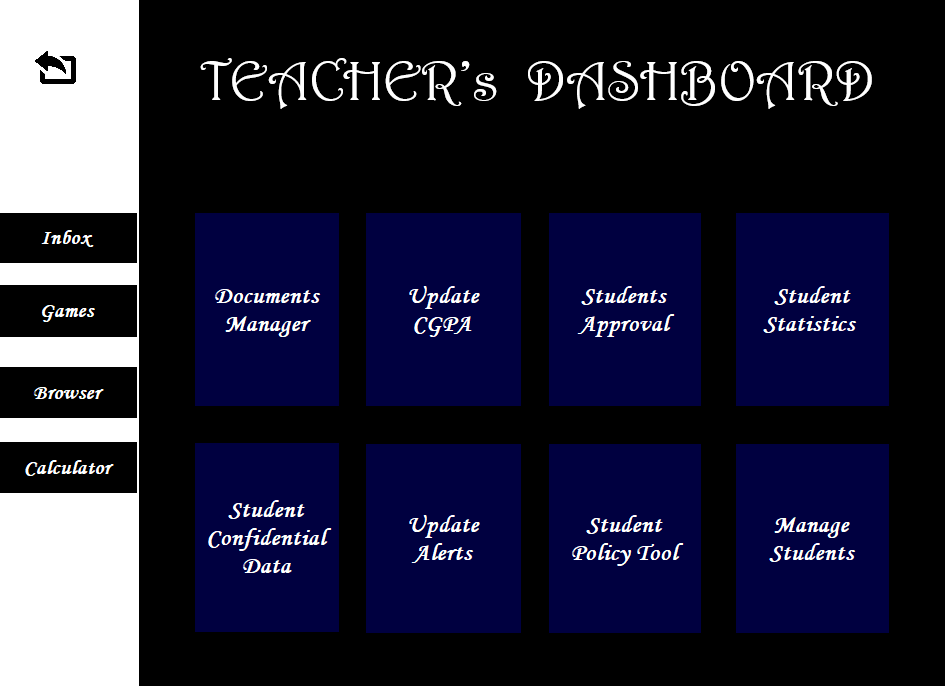
|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 11 | Enter invalid phone number in signup module | Phone number: 99001122 | Should display  Please enter 10-digit phone number | Displayed Please enter 10-digit phone number | pass |
| 12 | Enter not approved userid in user login module | Userid:12345  Password:1234 | Should display Your account is not yet approved, please wait for some more time | Displayed Your account is not yet approved, please wait for some more time | Pass |
| 13 | Trouble signing in | - | Recovery form | Recovery form | pass |
| 14 | Enter valid registered phone number in recovery module | Phone number:9900112233 | Show userid  Userid:2345 | Userid:2345 | Pass |
| 15 | Enter invalid registered phone number in recovery module | Phone number:9900112121 | Should display Please check the phone number | Displayed Please check the phone number | pass |
| 16 | Enter valid recovery code and reset password | Correct Userid:2345  Correct Recovery code:86768  New password:1234  Re-enter paasword:1234 | Should display Successfully updated | Displayed Successfully updated | Pass |
| 17 | Enter invalid recovery code and reset password | Incorrect Userid:2345  Incorrect Recovery code:86769  New password:1234  Re-enter paasword:1234 | Should display Incorrect details | Displayed Incorrect details | pass |
| 18 | Enter valid recovery code and miss match new password | Userid:2345  Recovery code:86768  New password:1234  Re enter:123456 | Should display Password doesn’t match | Displayed Password doesn’t match | pass |
| 19 | Teacher dashboard module | Click on document manager | Should display document uploader | Displayed document uploader | pass |
| 20 | Teacher dashboard module | Click on browser | Should display browser module | Displayed browser module | pass |
| 21 | Teacher dashboard module | Click on calculator | Should display calculator | Displayed calculator | pass |
| 22 | Teacher dashboard module | Click on student statistics | Should display overall student statistics | Displayed Student overall statistics | pass |
| 23 | Teacher dashboard module | Click on student policy tool | Should display tools enable/disable for students | Displayed Enable/disable tools for students | pass |
| 24 | Teacher dashboard module | Click on manage student’s | Should display remove selected student from the application | Displayed Remove student | pass |
| 25 | Teacher dashboard module | Click on student confidential data | Should display student’s data | Displayed Student’s data | pass |
| 26 | Teacher dashboard module | Click on update cgpa | Should display update cgpa to student’s | Displayed Update cgpa to student’s | pass |
| 27 | Teacher dashboard module | Click on update alerts | Should display update notification to student’s | Displayed update notification to student’s | pass |
| 28 | Teacher dashboard module | Click on student approval | Should display approve/disapprove student | Displayed approve/disapprove student | pass |
| 29 | Student dashboard module | Click on calculator | Should display calculator | Displayed Calculator | pass |
| 30 | Student dashboard module | Click on browser | Should display browser module | Displayed Browser module | pass |
| 31 | Student dashboard module | Click on games | Should display games | Displayed Game | pass |
| 32 | Student dashboard module | Click on document viewer | Should display uploaded documents | Displayed documents | pass |
| 33 | Student dashboard module | Click on my profile | Should display profile of student | Displayed Student profile | pass |
| 34 | Upload document with valid condition in admin module | Browse the document and load | Should display document saved | Displayed Document saved | pass |
| 35 | Student dashboard module | Click on feedback | Should display  Feedback module | Displayed Feedback module | pass |
| 36 | CGPA  Module | Click on Search | Should Display the Student Details if Present | Displayed Student CGPA | pass |
| 37 | CGPA  Module | Click on Update | Should Update the Student CGPA with the Existing one | Displayed Successfully Updated | pass |
| 38 | Student Statistics module | Click on Find | Should Display the Student Details if Present | Displayed Student Statistics | pass |

**CHAPTER 7**

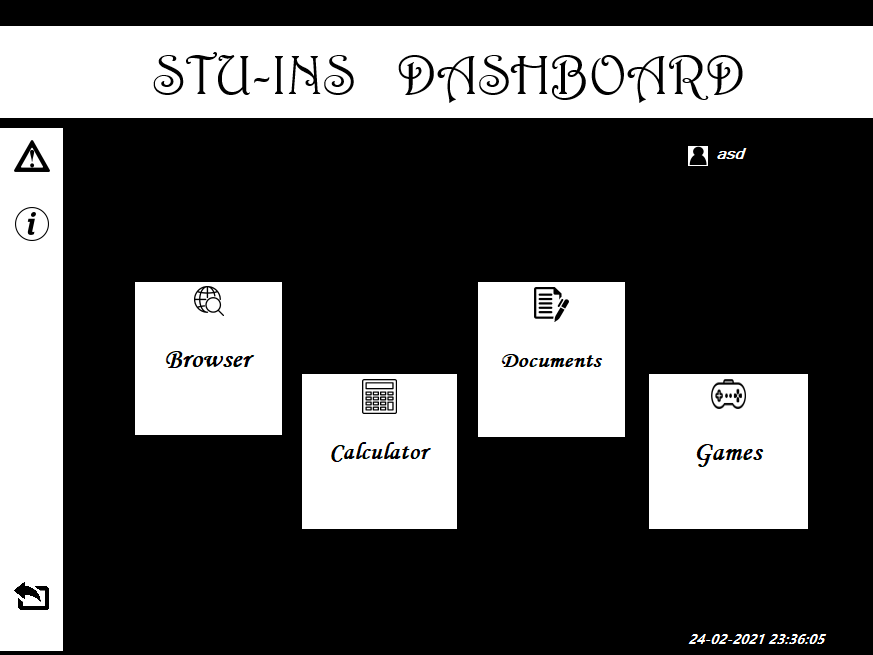
**RESULTS**

****

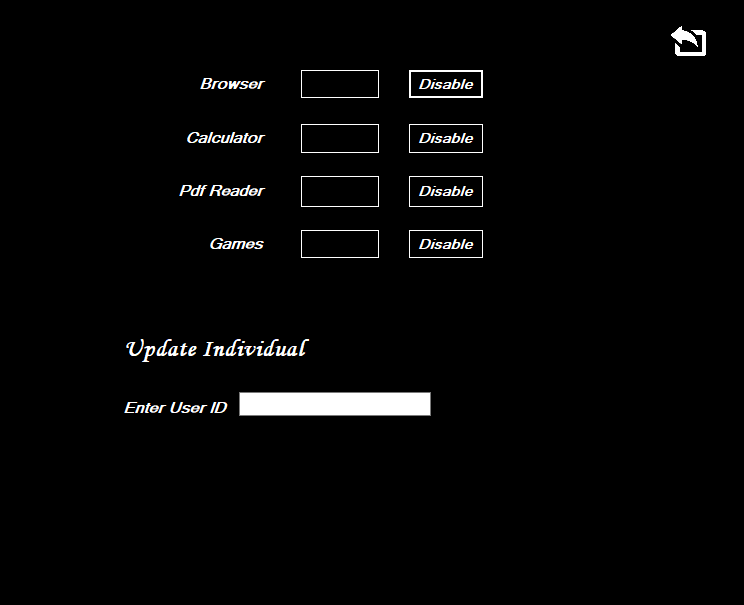
**Figure 6.1: STU-INS LOGIN FORM**

****

**Figure 6.2: STU-INS TEACHER’S DASHBOARD**

****

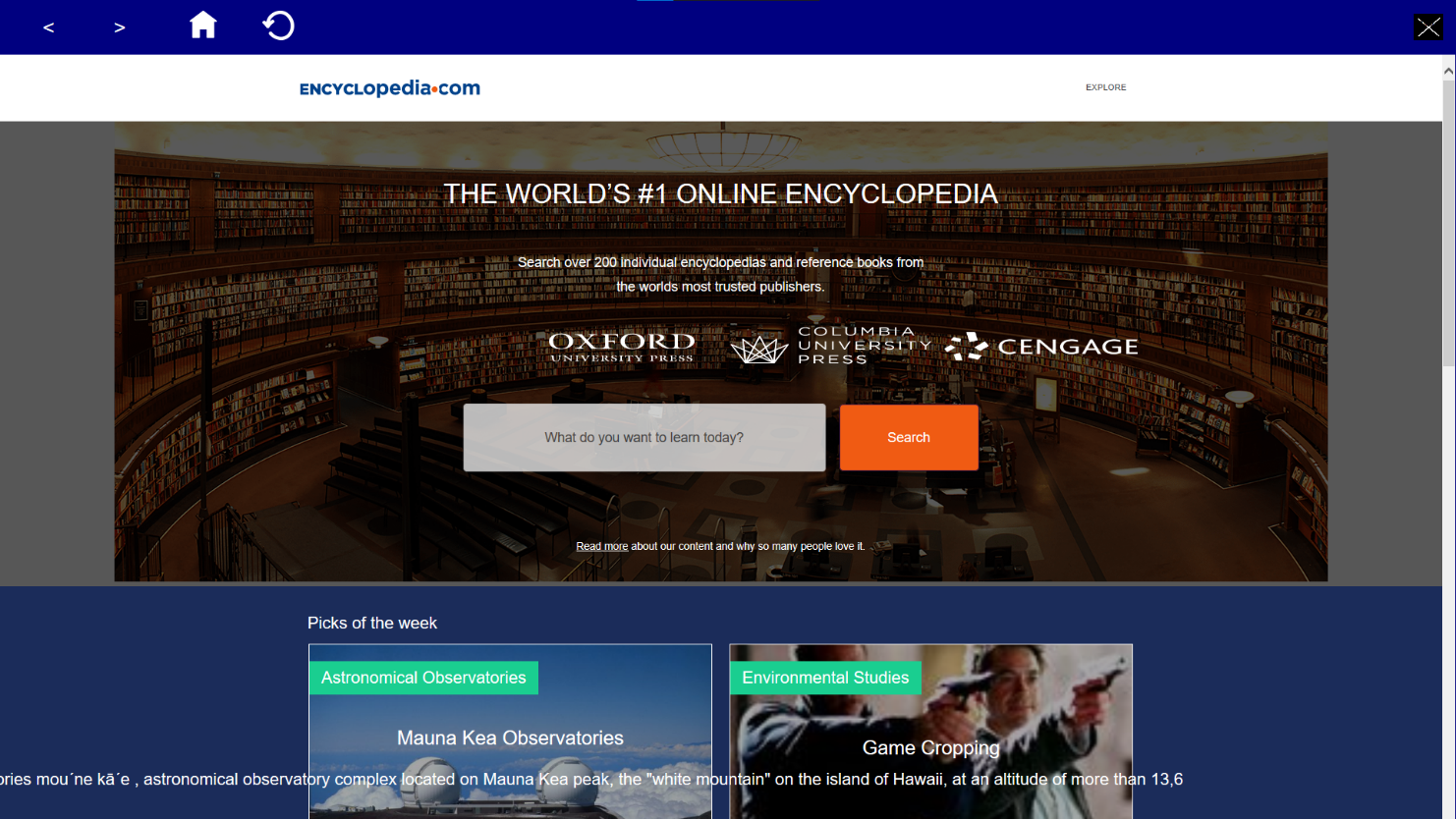
**Figure 6.3: STU-INS STUDENT DASHBOARD**

****

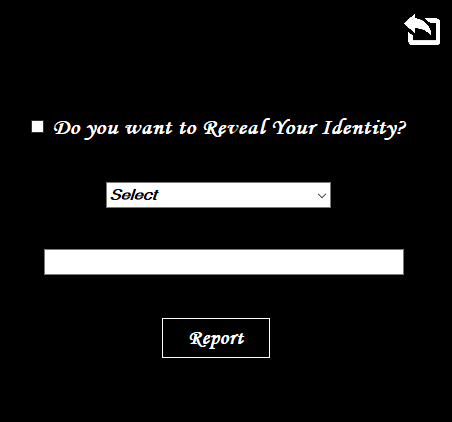
**Figure 6.4: STUDENT POLICY TOOL**

****

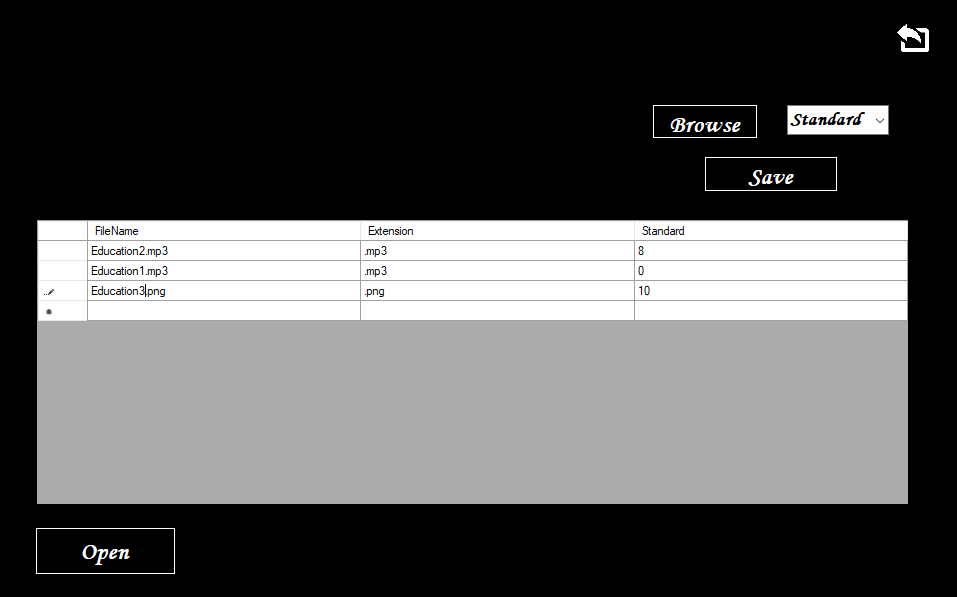
**Figure 6.5: MY PROFILE FORM**

****

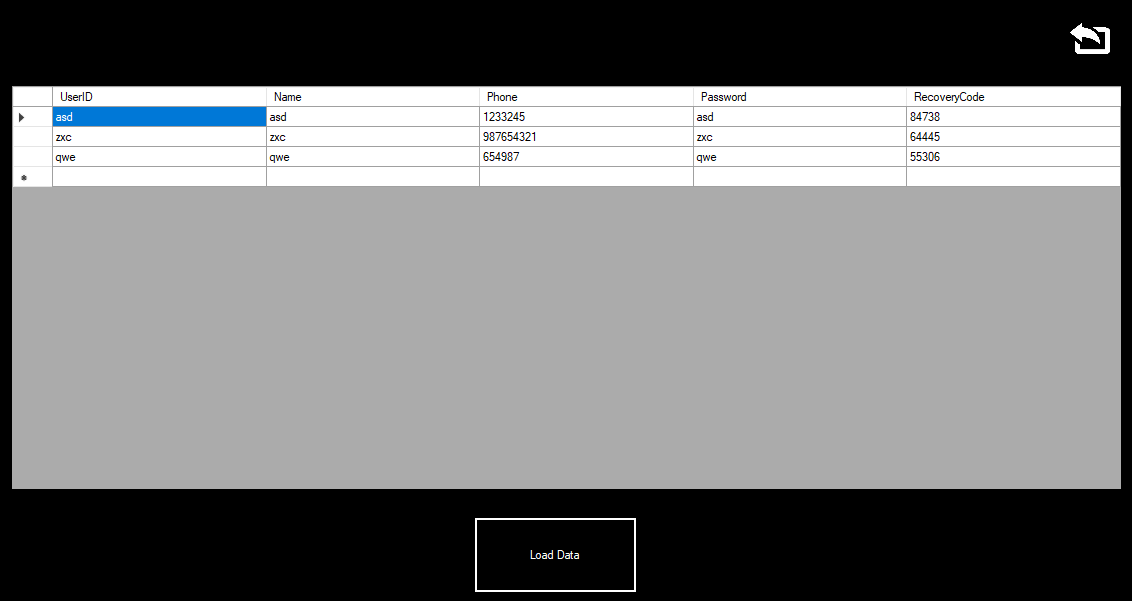
**Figure 6.6: WEB BROWSER**

****

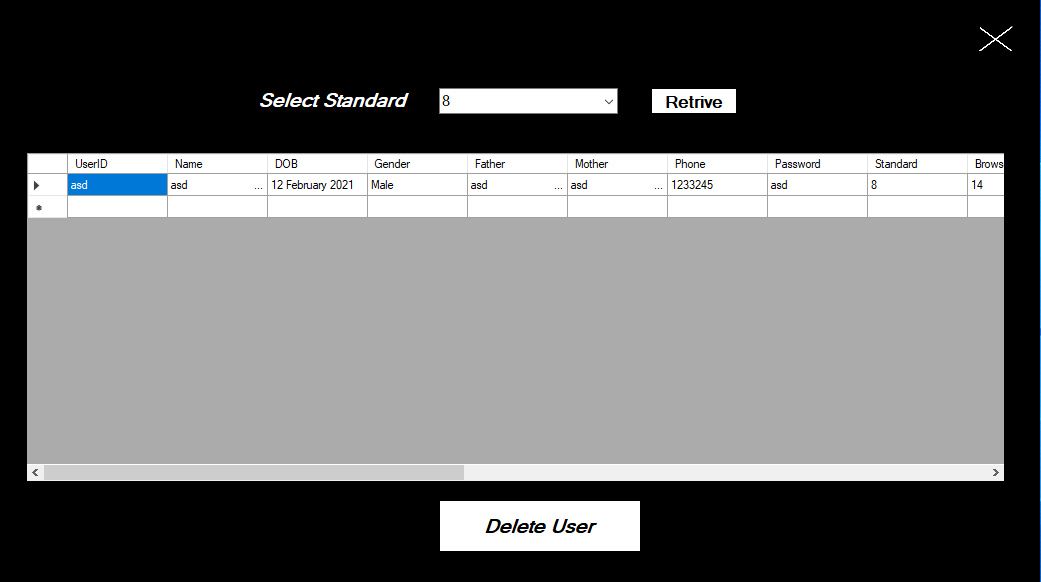
**Figure 6.7: STUDENT FEEDBACK FORM**

****

**Figure 6.8: DOCUMENTS UPLOADER**

****

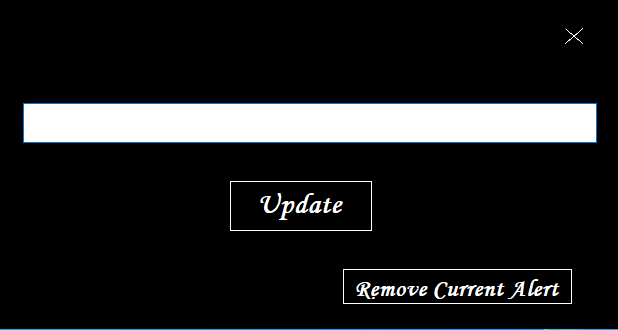
**Figure 6.9: STUDENT CONFIDENTIAL DATA FORM**

****

**Figure 6.10: MANAGE STUDENTS FORM**

****

**Figure 6.11: STUDENT’S STATISTICS FORM**

****

**Figure 6.12: NOTIFICATION FORM**

**CHAPTER 8**

**CONCLUSION**

By using this application, institute can manage their data and students in an effective manner. Even students get the user-friendly ui for an easy interaction. Teacher can monitor on the application usage by the student. Teacher can enable/disable applications for all/particular student(s). Institute can manage the student’s data like personal details, cgpa. Institute can upload the notifications for all the students at once.

**CHAPTER 9**

**FUTURE ENHANCEMENT**

Limited cloud storage access will be given to the students. Messenger portal for both teachers and student interaction. Students upload option for uploading their assessments. Inclusion of more educational tools. Application will be deployed for mobile users. Application is made available through online so that the application can be used and managed over the internet by sitting at any corner in the world. Exams can be conducted through the application .

**CHAPTER 10**

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* [**www.tutorialspoint.com**](http://www.tutorialspoint.com/)
* [**www.Wikipedia.com**](http://www.Wikipedia.com)