

Abstract

An organized and systematic once solution is essential for all universities and organizations. There are many departments of administration for the maintenance of college information and student databases in any institution. All these departments provide various records regarding students. Most of these track records need to maintain information about the students. This information could be the general details like student name, address, performance etc or specific information related to departments like collection of data. All the modules in college administration are interdependent. They are maintained manually. So they need to be automated and centralized as, Information from one module will be needed by other modules. For example, when a student needs his course completion certificate it needs to check many details about the student like his name, reg. number, year of study, exams he attended and many other details. So it needs to contact all the modules that are once, department and examination and result of students.

With that in mind, we overhauled the existing Student Database Management System and made necessary improvement to streamline the processes. Our work is useful for easy user interface. We are planning to utilize the powerful database management, data retrieval and data manipulation. We will provide more ease for managing the data than manually maintaining in the documents. Our work is useful for saving valuable time and reduces the huge paper work.

ACKNOWLEDGEMENT

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1. INTRODUCTION

The college administration is prepared or operates as registration form. Firstly and for admission with the important information about student and retrieve that information to correct it.

Student Database Management System deals with all the activities done by computer such as registration and admission process, staff and class management etc all these process are handled by computer management system.

The admission form designs and feed the information that is required for admission and to maintain the college records.

At the time of registration the administration should feel the information correctly if any wrong information field in records. It will be edited by record list carefully.

2. REQUIREMENT

Hardware Requirements:-

1. 532 MHz and above processor
2. Minimum 256 MB of RAM
3. 100 MB data space for installation
4. Other necessary input & output devices

Software Requirements:-

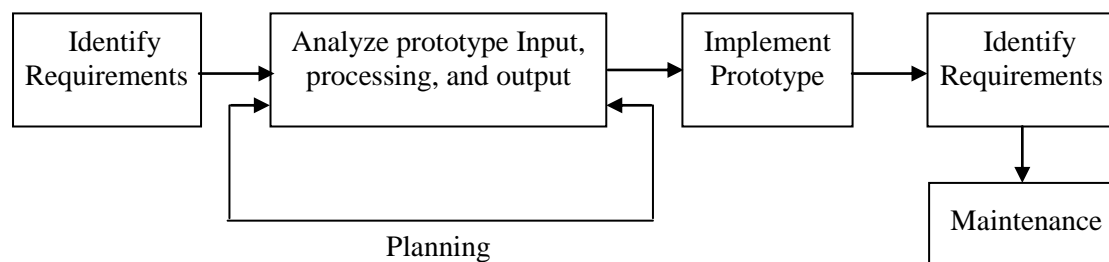
1. Windows Xp and above
2. Vb.net
3. Ms Access connectivity

3. ACTIVITIES PERFORMED

The entire project development activity is planned according to following steps.

1. Software /Hardware and other necessary for actual development and collected
2. Basic information regarding courses duration cost, eligibility, due.
3. Information modules are prepared.
4. Using above-mentioned methods all modules are integrated.
5. Project prototype thus formed is tested for desired efficiency.
6. Project is placed on Intranet.

Project Development Lifecycle:-



Planning:-

The project planning continues by preparing a three stage model viz.

1. **Strategic System Planning:** - Establishing relationships between real plans for candidate system.
2. **Information Requirement Analysis:** - Identifying exam requirements to direct the specific application of information at computer institute.
3. **Resource Allocation:** - Determining Hardware, Software, telecommunication facilities and financial recourses to execute the development of the system.

4. OVERVIEW OF .NET FRAMEWORK

Visual Basic.NET is the most user-friendly, developer-friendly language for creating just about any kind of application in the .NET platform.

VB, the most popular development tool today, is fully supported in .NET environment through VB.NET. VB.NET will likely be the most common tool for the new .NET platforms, since it offers the smoothest transition for existing VB developers, as well as being very accessible to developers who have used other languages in the past.

Overview of .NET Framework:-

All the layers of software development above the OS are covered by .NET, which is a framework. The frameworks cover all the layers from memory management and component loading to multiple ways of rendering user and program interfaces. In between, there are layers that provide just about any system-level capability that a developer would need.

Blocks of .NET Framework Architecture:-

The major components of the Microsoft .Net framework are shown in the following diagram:

- .NET Compatible Languages
- Common Language Specification (CLS)
- Common Type System (CTS)
- Framework Class Library
- Application Templates and Services
- Common Language Runtime (CLR)

.NET Compatible Languages:

VB.NET, C#.NET, Jscript.NET, J#.NET etc. are languages compatible to .NET framework. Applications Templates which are given in layer 3 developed using these languages.

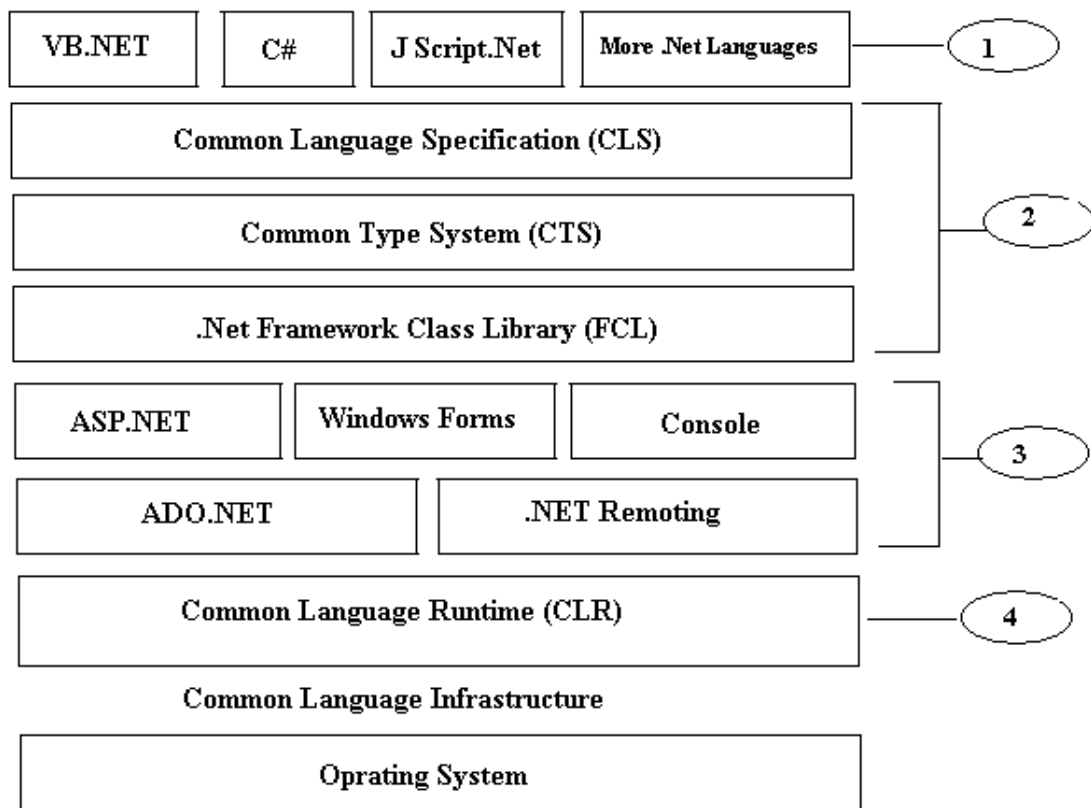


Fig. Framework Of VB.NET

Common Language Specification (CLS):

These are set of rules defined for all .NET compatible languages. The CLS helps enhance and ensure language interoperability by defining a set of features that developer can relay on to be available in a wide variety of languages.

Common Type System (CTS):

The Common Type System performs the following functions:

- Establishes a framework that helps enable cross language integration, type safety, and high performance code execution.
- Provides an Object-Oriented model that supports the complete implementation of many programming languages.
- Defines rules that languages must follow, which helps ensure that objects written in different languages can interact with each other.

Framework Class Library:

Types of classes:

- .NET classes

- IO classes

- XML classes

- ADO.NET classes

.NET supports collection of some predefined classes. These classes are put under hierarchy of a special structure defined called as Namespaces.

Applications Templates and Services:

- Application Types on .NET

- Console Based

- Windows Forms Application

- Net Removing

- ASP.NET Services

- ADO.NET

The Common Language Runtime (CLR):

The CLR is the base and is considered as the heart of .NET framework. It is the engine that drives key functionality, which includes cross-language inheritance, allocation and management of memory, reference tracking for objects and handles garbage collection.

5. INTRODUCTION TO MS-ACCESS

About Access databases:

A database is a collection of information that's related to a particular subject or purpose, such as tracking customer orders or maintaining a music collection. If your database isn't stored on a computer, or only parts of it are, you may be tracking information from a variety of sources that you have to coordinate and organize yourself.

For example, suppose the phone numbers of your suppliers are stored in various locations: in a card file containing supplier phone numbers, in product information files in a file cabinet, and in a spreadsheet containing order information. If a supplier's phone number changes, you might have to update that information in all three places. In a database, however, you only have to update that information in one place—the supplier's phone number is automatically updated wherever you use it in the database.

What is a database?

A database is a tool for collecting and organizing information. Databases can store information about people, products, orders, or anything else. Many databases start as a list in a word-processing program or spreadsheet. As the list grows bigger, redundancies and inconsistencies begin to appear in the data.

The data becomes hard to understand in list form, and there are limited ways of searching or pulling subsets of data out for review. Once these problems start to appear, it's a good idea to transfer the data to a database created by a database management system (DBMS), such as Office Access 2007.

A computerized database is a container of objects. One database can contain more than one table. For example, an inventory tracking system that uses three tables is not three databases, but one database that contains three tables. Unless it has been specifically designed to use data or code from another source, an Access database stores its tables in a single file, along with other objects, such as forms, reports, macros, and modules. Access, you can:

- Add new data to a database, such as a new item in an inventory
- Edit existing data in the database, such as changing the current location of an item
- Delete information, perhaps if an item is sold or discarded
- Organize and view the data in different ways
- Share the data with others via reports, e-mail messages, an intranet , or the Internet

The parts of an Access database:

The following sections are short descriptions of the parts of a typical Access database. To learn more about each part, follow the links in the **See Also** section of this article.

- Tables
- Forms
- Reports
- Queries
- Macros
- Modules

Tables:

A database table is similar in appearance to a spreadsheet, in that data is stored in rows and columns. As a result, it is usually quite easy to import a spreadsheet into a database table. The main difference between storing your data in a spreadsheet and storing it in a database is in how the data is organized.

To get the most flexibility out of a database, the data needs to be organized into tables so that redundancies don't occur. For example, if you're storing information about employees, each employee should only need to be entered once in a table that is set up just to hold employee data. Data about products will be stored in its own table, and data about branch offices will be stored in another table. This process is called normalization.

Each row in a table is referred to as a record. Records are where the individual pieces of information are stored. Each record consists of one or more fields. Fields correspond to the columns in the table. For example, you might have a table named "Employees" where each record (row) contains information about a different employee,

and each field (column) contains a different type of information, such as first name, last name, address, and so on. Fields must be designated as a certain data type, whether it's text, date or time, number, or some other type.

Another way to describe records and fields is to visualize a library's old-style card catalog. Each card in the cabinet corresponds to a *record* in the database. Each piece of information on an individual card (author, title, and so on) corresponds to a *field* in the database.

Forms:

Forms are sometimes referred to as "data entry screens." They are the interfaces you use to work with your data, and they often contain command buttons that perform various commands. You can create a database without using forms by simply editing your data in the table datasheets. However, most database users prefer to use forms for viewing, entering, and editing data in the tables.

Forms provide an easy-to-use format for working with the data, and you can also add functional elements, such as command buttons, to them. You can program the buttons to determine which data appears on the form, open other forms or reports, or perform a variety of other tasks. For example, you might have a form named "Customer Form" in which you work with customer data. The customer form might have a button which opens an order form where you can enter a new order for that customer.

Forms also allow you to control how other users interact with the data in the database. For example, you can create a form that shows only certain fields and allows only certain operations to be performed. This helps protect data and to ensure that the data is entered properly.

Reports:

Reports are what you use to summarize and present data in the tables. A report usually answers a specific question, such as "How much money did we receive from each customer this year?" or "What cities are our customers located in?" Each report can be formatted to present the information in the most readable way possible.

A report can be run at any time, and will always reflect the current data in the database. Reports are generally formatted to be printed out, but they can also be viewed on the screen, exported to another program, or sent as e-mail message.

Queries:

Queries are the real workhorses in a database, and can perform many different functions. Their most common function is to retrieve specific data from the tables. The data you want to see is usually spread across several tables, and queries allow you to view it in a single datasheet. Also, since you usually don't want to see all the records at once, queries let you add criteria to "filter" the data down to just the records you want. Queries often serve as the record source for forms and reports.

Certain queries are "updateable," meaning you can edit the data in the underlying tables via the query datasheet. If you are working in an updateable query, remember that your changes are actually being made in the tables, not just in the query datasheet.

Queries come in two basic varieties: select queries and action queries. A select query simply retrieves the data and makes it available for use. You can view the results of the query on the screen, print it out, or copy it to the clipboard. Or, you can use the output of the query as the record source for a form or report. An action query, as the name implies, performs a task with the data. Action queries can be used to create new tables, add data to existing tables, update data, or delete data.

Macros:

Macros in Access can be thought of as a simplified programming language which you can use to add functionality to your database. For example, you can attach a macro to a command button on a form so that the macro runs whenever the button is clicked. Macros contain actions that perform tasks, such as opening a report, running a query, or closing the database. Most database operations that you do manually can be automated by using macros, so they can be great time-saving devices.

Modules:

Modules, like macros, are objects you can use to add functionality to your database. Whereas you create macros in Access by choosing from a list of macro actions, you write modules in the Visual Basic for Applications (VBA) programming language. A module is a collection of declarations, statements, and procedures that are stored together as a unit. A module can be either a class module or a standard module. Class modules are attached to forms or reports, and usually contain procedures that are specific to the form or report they're attached to. Standard modules contain general procedures that aren't associated with any other object. Standard modules are listed under **Modules** in the Navigation Pane, whereas class modules are not.

Features of MS-ACCESS:-

Access is multi-featured Database Management System that can use by both beginners and those who have pervious Database Management System experience. This section describes some of the key features of Access.

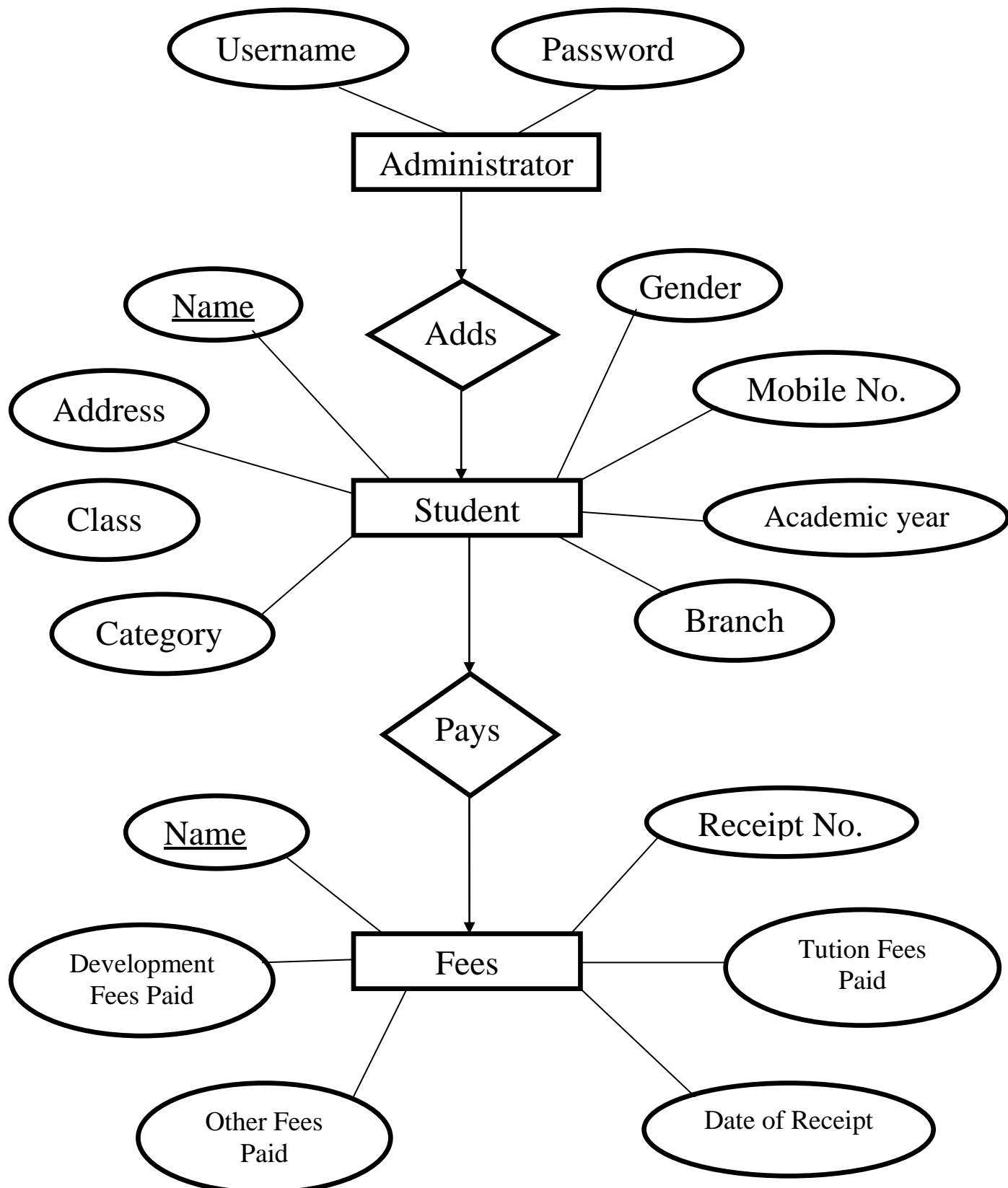
Windows Based Applications:-

Access is a Windows based program application has similar to Windows NT. You can cut, paste data any windows application to and from access. You need to have either Windows NT or Windows 95 on your machine before install Access.

Large Data Management Capacity:-

Access maintains a single disk file for a database and all its associates object. The maximum size of this file can be 1 Gigabytes. Access allows a maximum of 32,768 tables and object and object in the database.

6. ER Diagram



Description of ER diagram:

There are 3 main entities

- 1) Administrator
- 2) Student
- 3) Fees

Administrator:

It has two attributes like username and password. It is the only one who can access the whole database with authentication. It does the operations like add Student modify student delete student, also handles the whole task related to the fees transaction and all the important task

Student:

It is the entity which includes the attributes like name, academic year, branch, class, category, gender, address, mobile no. It has a relationship for paying fees entity.

Fees:

It has attributes like name, receipt no, tuition fees paid, development fees paid, other fees paid, date of receipt

Here name is used as a primary key

7. TABLES USED

Field Name	Data Type	Description
First Name	Text	Primary Key
MName	Text	-
LName	Text	-
Academic _year	Number	-
Branch	Text	-
Class	Number	-
Category	Text	-
Gender	Text	-
Address	Text	-
Mobile No	Number	-
Tution_fees	Number	-
Development fees	Number	-
Other fees	Number	-

1. Table: Student

Field Name	Data Type
First Name	Text
MName	Text
LName	Text
Receipt_no	Number
Tuition_fees_paid	Number
Development_fees_paid	Number
Other_fees_paid	Number
Date_of_receipt	Date/time

2. Table: Fees

8. TESTING

Software testing is a process of verifying and validating that a software application or program. Software testing.

➤ Meets the business and technical requirement that guided it's design and development, and Work's as expected

Software testing also identifies important defects, flaws, or errors in the application code that must be fixed. The modifier "important" in the previous sentens is, well, important because defects must be categorized by severity.

During test planning we decide what an important defect is by reviewing the requirement and design documents with an eye towards answering the question "important to whom"? Generally speaking, an important defect is one that form the customer perspective affects the usability or functionality of the application. Using colors for a traffic lighting scheme in a desktop dashboard may be a no-brainer during requirement definition and easily implemented during development but in fact may not be entirely workable if during testing we discover that the primary business sponsor is color blind. Suddenly, it becomes an important defect. (About 8% of men and .4% of women have some form of color blindness.)

The quality assurance aspect of software development-documenting the degree to which the developer followed corporate standard processes or best practices is not addressed in this paper because assuring quality is not a responsibility of the testing team. The testing team cannot improve quality; they can only measures it, although it can be argued that doing things like designing test before coding begins will improve quality because the coder can that information while thinking about their designs and during coding and debugging.

Software testing has three Main purposes: verification, validation, and defect finding.

➤ The verification process confirms that the software meets its technical specification. A "specification" is a description of a function in terms of a measurable output value given a specific input value specific precondition. A simple specification

may be along the time of “a SQL query retrieving data for a single account against the multi-month account account-summary table must return these eight fields <list> ordered by month within 3 second of submission.”

➤ The validation process confirms that the software meets the business requirement. A simple example of business requirement is “after choosing a branch office name, information about the branch customer account managers will appear in a new window. The new window will present manager identification and summary information about each manager’s customer base: <list of data elements.>.” other requirement provides details on how the data will be summarized, formatted and displayed.

➤ A defect is a variens between the expected and actual result. The defects altimate source may be traced to a fault introduced in the specification, design, or development (coding) phases.

Why Test Software?

A “bug” is really a problem in the code; software testing is focused on finding defects in the finale product. Here are some important defects that better testing would have found.

No system development process will be completed unless the software does exactly what it is supposed to do. Reliability and efficiency are the yardsticks of performance for any software.

Testing will be performed by running the system using the dummy data. It also tested whether the system identifiers the problem correctly. Testing is vital to the success of the system.

System testing makes logical assumption that if all parts of the system are working correctly, the requirements have been satisfied completely. And if requirement have been full filled, the goal can be achieved very easily.

But no system is 100% accurate; there can still be some faults in the system. The testing is done to overcome in maximum number of problem in the system and to make the system bug free.

9. SCREEN LAYOUT

Login Page:



The screenshot shows a Windows-style window titled "Form1" with a blue border. Inside the window is a graphic of a dark blue ID card with a purple lanyard. The ID card has a white label at the top that reads "Administration Login". Below this label is a light blue rectangular area containing two input fields: "Username" with the text "ashwini" and "Password" with the text "123". At the bottom of the ID card graphic are two buttons: "Login" and "Cancel".

Main Menu:



Add Student:

Add_Student

First Name Middle Name Last Name

Year Branch Class

Category Gender

Address Mobile No

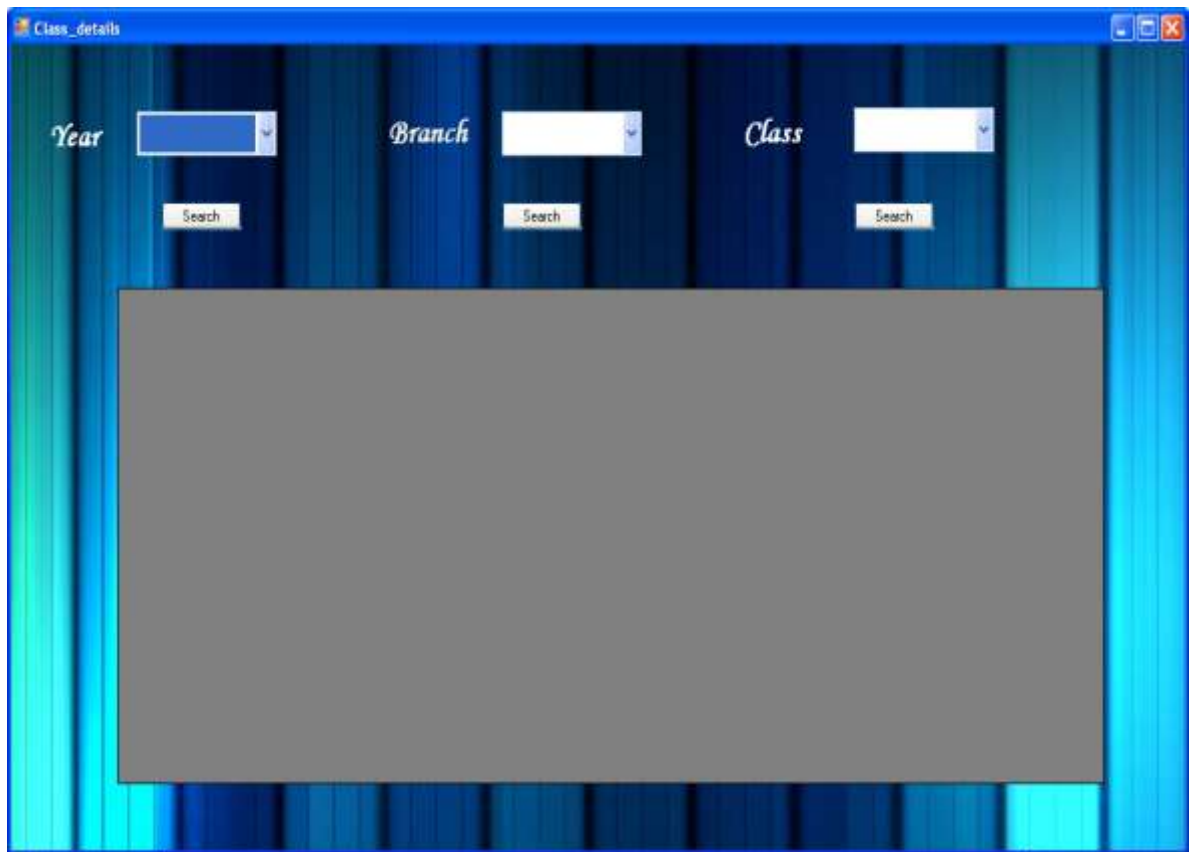
Tuition fees

Development fees

Other fees

Total fees

Student Details:



The screenshot shows a window titled "Class_details" with a blue border. The background has a blue and green vertical striped pattern. At the top, there are three search filters: "Year" with a blue dropdown menu, "Branch" with a white dropdown menu, and "Class" with a white dropdown menu. Below each dropdown is a "Search" button. A large, solid gray rectangular area occupies the center of the window, likely representing a list of student details that is currently hidden or blank.

Accept Fees:

receipt

First Name Middle Name Last Name

Tuition_fees	000000	Development_fees	000000	Other_fees	000000	Total_fees	000000
Tuition_fees_paid	Label12	Development_fees_paid	Label13	Other_fees_paid	Label14	Total_fees_paid	000000
	000000		000000		000000		000000

Tuition_fees_paid

Development_fees_paid

Other_fees_paid

date_of_receipt

Receipt Details:

The screenshot shows a window titled "receipt_details" with a blue title bar and standard Windows window controls. The background is a vibrant green image of leaves. At the top, there are two date pickers: "From" and "To", both displaying "Saturday, March". A "Search" button is positioned between them. Below these elements is a large, solid grey rectangular area, likely a placeholder for a receipt image or a list of items.

10. CONCLUSION

The college can handle full-scale computer and computer related resource. College Administration System deals with all the activities done by computer such as registration and admission process, staff and class management, time etc all these process are handled by computer management system.

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