# STUDENT PREDICTIVE ANALYSIS USING DATA MINING

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**ABSTRACT-** Detecting students performance becomes more challenging ,due to the large volume of data in educational databases. The lack of existing system to analyze and monitor the student progress and performance is not being addressed .First, the study on existing prediction methods is still insufficient to identify. The most suitable methods for predicting the performance of students .Second is due to the lack of investigations on the factors affecting students achievements in particular courses. Therefore,a systematical literature review on predicting student performance by using data mining techniques is proposed to improve students achievements. The main objective is to provide an overview on the data mining techniques that have been used to predict students performance.

**KEYWORDS –** Data Mining, Predictive Analysis.

## 1. INTRODUCTION

Students performance is an essential part in higher learning institutions. This is because one of the criteria for a high quality university is based on its excellent record of academic achievements . There are a lot of definitions on students performance based on the previous literature.However, most of the studies mentioned about graduation being the measure of students success.Generally,most of higher learning institutions in Malaysia used the final grades to evaluate students performance. Final grades are based on the feedbacks from the students and faculty. By analyzing students performance, a strategic program can be well planned during their period of studies in an institution . Currently, there are many techniques being proposed to evaluate students performance. Data mining is one of the most popular techniques to analyze students performance. Data mining has been widely applied in educational area . It is called educational data mining. Educational data mining is a process used to extract useful information and patterns from a huge educational database . The usefulinformation and patterns can be used in predicting students performance. As a result,it would assist the educators in providing an effectiveteaching approach. Besides, educatorscouldalso monitor their students achievements. Students could improve their learning activities,allowing the administration to improve the systems performance. Thus ,the application of data mining techniques can be focused on specific needs with different entities.

## 2. PROPOSED SYSTEM

In this project the students feedback is shown in the chart format, such that clear analysis of the student will be provided .The faculty feedback is also added ,such that faculty will provide feedback about the students through a set of questions. In this project decision tree algorithm is used to predict the students mentality and activities being updated to the faculties .Through this analysis we can easily sort out the reason for the student dropout and can prevent from being dropped out from the college.

## 3. MODULE IMPLEMENTATION

### 3.1 ADMIN MODULE

Module is the super user of the system who maintains the details of the system. Admin module contains the following sub modules; course details, branch details, semester details, subject details,student registration, student attendance, student marks, student update marks, student details update.

### 3.2 STAFF MODULE

- **Upload dropout details:**
- **Take the report**
- **View reasons for dropout**

### 3.3 STUDENT MODULE

- **Registration**
  The students have to register for feedback before login
- **Login**
  After the registration students are allowed to login to take feedback
- **Take the feedback**

After the completion of the report it will be uploaded in the admin page

- **Logout**
  After saving the details student can logout from the page

## 4. METHODOLOGIES

### 4.1Crystal Reports

Crystal Reports for Visual Basic .NET is the standard reporting tool for Visual Basic.NET; it brings the ability to create interactive, presentation-quality content — which has been the strength of Crystal Reports for years — to the .NET platform.

With Crystal Reports for Visual Basic.NET, you can host reports on Web and Windows platforms and publish Crystal reports as Report Web Services on a Web server. To present data to users, you could write code to loop through recordsets and print them inside your Windows or Web application. However, any work beyond basic formatting can be complicated: consolidations, multiple level totals, charting, and conditional formatting are difficult to program.

With Crystal Reports for Visual Studio .NET, you can quickly create complex and professional-looking reports. Instead of coding, you use the Crystal Report Designer interface to create and format the report you need. The powerful Report Engine processes the formatting, grouping, and charting criteria you specify.

#### 4.1.1 Report Experts

Using the Crystal Report Experts, you can quickly create reports based on your development needs:

- Choose from report layout options ranging from standard reports to form letters, or build your own report from scratch.
- Display charts that users can drill down on to view detailed report data.
- Calculate summaries, subtotals, and percentages on grouped data.
- Show TopN or BottomN results of data.
- Conditionally format text and rotate text objects.

### 4.2 Data warehousing

SQL Server includes tools for extracting and analyzing summary data for online analytical processing (OLAP). SQL Server also includes tools for visually designing databases and analyzing data using English-based questions.

### 4.3 Distributed Processing:

Network use distributed Processing, in which a task is divided among multiple computers.

Advantages of distributed processing included the following.

- Security/encapsulation.
- Distributed databases.
- Faster problem solving.
- Security through redundancy.

## 5. LANGUAGE DESCRIPTION

### 5.1 Active Server Pages.NET

ASP.NET is a programming framework built on the common language runtime that can be used on a server to build powerful Web applications. ASP.NET offers several important advantages over previous Web development models:

- **Enhanced Performance.** ASP.NET is compiled common language runtime code running on the server. Unlike its interpreted predecessors, ASP.NET can take advantage of early binding, just-in-time compilation, native optimization, and caching services right out of the box. This amounts to dramatically better performance before you ever write a line of code.
- **World-Class Tool Support.** The ASP.NET framework is complemented by a rich toolbox and designer in the Visual Studio integrated development environment. WYSIWYG editing, drag-and-drop server controls, and automatic deployment are just a few of the features this powerful tool provides.
- **Power and Flexibility.** Because ASP.NET is based on the common language runtime, the power and flexibility of that entire platform is available to Web application developers. The .NET Framework class library, Messaging, and Data Access solutions are all seamlessly accessible from the Web. ASP.NET is also language-independent, so you can choose the language that best applies to your application or partition your application across many languages. Further, common language runtime interoperability guarantees that your existing investment in COM-based development is preserved when migrating to ASP.NET.
- **Simplicity.** ASP.NET makes it easy to perform common tasks, from simple form submission and client authentication to deployment and site configuration. For example, the ASP.NET page framework allows you to build user interfaces that cleanly separate application logic from presentation code and to handle events in a simple, Visual Basic - like forms processing model. Additionally, the common language runtime simplifies development, with managed code services such as automatic reference counting and garbage collection.
- **Manageability.** ASP.NET employs a text-based, hierarchical configuration system, which simplifies applying settings to your server environment and Web applications. Because configuration information is stored as plain text, new settings may be applied without

the aid of local administration tools. This "zero local administration" philosophy extends to deploying ASP.NET Framework applications as well. An ASP.NET Framework application is deployed to a server simply by copying the necessary files to the server. No server restart is required, even to deploy or replace running compiled code.

- **Scalability and Availability.** ASP.NET has been designed with scalability in mind, with features specifically tailored to improve performance in clustered and multiprocessor environments. Further, processes are closely monitored and managed by the ASP.NET runtime, so that if one misbehaves (leaks, deadlocks), a new process can be created in its place, which helps keep your application constantly available to handle requests.
- **Customizability and Extensibility.** ASP.NET delivers a well-factored architecture that allows developers to "plug-in" their code at the appropriate level. In fact, it is possible to extend or replace any subcomponent of the ASP.NET runtime with your own custom-written component. Implementing custom authentication or state services has never been easier.
- **Security.** With built in Windows authentication and per-application configuration, you can be assured that your applications are secure.

**5.2 Language Support**

The Microsoft .NET Platform currently offers built-in support for three languages: C#, Visual Basic, and JScript.

**6. Database**

A database is similar to a data file in that it is a storage place for data. Like a data file, a database does not present information directly to a user; the user runs an application that accesses data from the database and presents it to the user in an understandable format.

A database typically has two components: the files holding the physical database and the database management system (DBMS) software that applications use to access data. The DBMS is responsible for enforcing the database structure, including:

- Maintaining the relationships between data in the database.
- Ensuring that data is stored correctly, and that the rules defining data relationships are not violated.
- Recovering all data to a point of known consistency in case of system failures.

**6.1 Relational Database**

There are different ways to organize data in a database but relational databases are one of the most effective. Relational database systems are an application of mathematical set theory to the problem of effectively organizing data. In a relational database, data is collected into tables (called relations in relational theory).

When organizing data into tables, you can usually find many different ways to define tables. Relational database theory defines a process, normalization, which ensures that the set of tables you define will organize your data effectively.

**6.2 Client/Server**

In a client/server system, the server is a relatively large computer in a central location that manages a resource used by many people. When individuals need to use the resource, they connect over the network from their computers, or clients, to the server.

Examples of servers are: In a client/server database architecture, the database files and DBMS software reside on a server. A communications component is provided so applications can run on separate clients and communicate to the database server over a network. The SQL Server communication component also allows communication between an application running on the server and SQL Server.

Server applications are usually capable of working with several clients at the same time. SQL Server can work with thousands of client applications simultaneously. The server has features to prevent the logical problems that occur if a user tries to read or modify data currently being used by others.

While SQL Server is designed to work as a server in a client/server network, it is also capable of working as a stand-alone database directly on the client. The scalability and ease-of-use features of SQL Server allow it to work efficiently on a client without consuming too many resources.

**6.3 Structured Query Language (SQL)**

To work with data in a database, you must use a set of commands and statements (language) defined by the DBMS software. There are several different languages that can be used with relational databases; the most common is SQL. Both the American National Standards Institute (ANSI) and the International Standards Organization (ISO) have defined standards for SQL.

**6. CONCLUSION**

Nowadays there are more number of online technical forums are available to clarify our doubts as well as we can share our experience regarding our area of interest. But, this type of technical forums are has some drawbacks i.e. in this forum we can share our ideas to all other users in the same forum that users may from different platform. That user cannot able to give correct answer to the other users questions. So, to avoid this drawback and to fast up the discussion process this application is used. This is used to collect an exact answer for the question from highly experienced users in the same forums.

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