Cloud Based Result Analysis and Management System Using Rest API

N. Pavithra, G. Suganya, A. Sathya Sofia

1Assistant Professor Department of Computer Science and Engineering PSNA College of Engineering and Technology Dindigul, Tamil Nadu.
2Department of Computer Science and Engineering PSNA College of Engineering and Technology Dindigul, Tamil Nadu.

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Address For Correspondence:
N. Pavithra, Assistant Professor Department of Computer Science and Engineering PSNA College of Engineering and Technology Dindigul, Tamil Nadu.
E-mail: Pavinatarajan95sa@gmail.com

ABSTRACT

The aim of this work is to create a web application for colleges. The purpose of this is to ANALYSE THE RESULT AND MAINTAIN THE DATABASES. Student Result analysis System is helpful for students as well as the college authorities. In the current system all the activities are done manually. It is very time consuming and costly. Our Student Result Analysis System deals with the various activities related to the students. During analysis, data collected on the various files, decision points and transactions handled by the current system. The commonly used tools in the system are PHP, BOOTSTRAP CSS, XAMPP SERVER, DOCKER, etc. Training, experience and common sense are required for collection of relevant information needed to develop the system. The success of the system depends largely on how clearly the problem is defined, thoroughly investigated and properly carried out through the choice of solution.

KEYWORDS:

INTRODUCTION

Cloud computing relies on sharing of resources to achieve coherence and economy of scale, similar to a utility over a network. Cloud computing in short just “the cloud, also focuses maximizing the effectiveness of the shared resources. Cloud resources are usually not only shared by multiple users but are also dynamically reallocated per demand. This approach should maximize the use of computing power thus reducing environmental damage and also since less power, air conditioning, rack space, etc. are required for a variety of functions.
Cloud computing is an upcoming technology that uses the cloud power to many technical solution. Cloud computing provides various computing resources to store in server. Cloud computing comprises of three service model. They are Infrastructure as a Service, Platform as a Service, and Software as a Service shown in figure 1.

**Infrastructure as a Service (IaaS):**
- is a service which support operations including storage, hardware, servers and networking components. In IaaS the user need not to manage the server but have the control over the server.

**Platform as a Service (PaaS):**
- is a standard for delivering operating systems. They need to install or download any operating system and access the services over the internet.

**Software as a Service (SaaS):**
- is a service model in which application are hosted by a vendor and made available to customer over a network, typically on the internet.

Depending upon the usage the customer can choose the service model. The customer may pay to the loud according to their usage. The quality play an important role in the success of the cloud computing. Cloud computing have scalable feature according to their customer need if they want to store more data.

Fig. 1: Types of services
II. Existing System:

At first the records are maintained by the staffs manually and the results are analyzed manually. If the results are analyzed manually sometimes the error may occur, so it may lead to interchange of records. At first manual record of students marks are maintained on Excel Sheet. The calculations like percentage, number of pass and fail, subject wise details, overall results are found manually which have a lot of time consuming. And then in current system student results are analyzed according to their semester exams by converting the Pdf to Excel sheet which is received from the University and then they calculate their result and represented in graph for a easy understanding.

Proposed System:

Methodology:

Docker:

Docker is an open-source project that automates the deployment of applications inside software containers. Quote of features from Docker web pages, Docker containers wrap up a piece of software in a complete file system that contains everything it needs to run: code, runtime, system tools, system libraries – anything you can install on a server. This guarantees that it will always run the same, regardless of the environment it is running in. Docker provides an additional layer of abstraction and automation of operating-system-level virtualization on Windows and Linux. Docker uses the resource isolation features of the Linux kernel such as cgroups and kernel namespaces, and a union-capable file system such as OverlayFS and others to allow independent “containers” to run within a single Linux instance, avoiding the overhead of starting and maintaining virtual machines.

In this work the DOCKER acts as a cloud, it is a virtualization software in which the data are maintained by the cloud and the application can be accessed from and anywhere.

Rest Api:

Representational state transfer (REST) or RESTful Web services are one way of providing interoperability between computer systems on the Internet. REST compliant Web services allow requesting systems to access and manipulate textual representations of Web resources using a uniform and predefined set of stateless operations. Other forms of Web service exist, which expose their own arbitrary sets of operations such as WSDL and SOAP. “Web resources” were first defined on the World Wide Web as documents or files identified by their URLs, but today they have a much more generic and abstract definition encompassing every thing or entity that can be identified, named, addressed or handled, in any way whatsoever, on the Web. In a RESTful Web service, requests made to a resource's URI will elicit a response that may be in XML, HTML, JSON or some other defined format. The response may confirm that some alteration has been made to the stored resource, and it may provide hypertext links to other related resources or collections of resources. Using HTTP, as is most common, the kind of operations available include those predefined by the HTTP verbs GET, POST, PUT and DELETE and so on. By making use of a stateless protocol and standard operations, REST systems aim for fast performance, reliability, and the ability to grow, by re-using components that can be managed and updated without affecting the system as a whole, even while it is running.

In this work the results are fetched directly from the university through an URL which is passed through a program. Then the results are stored in the respective college database, from which the results are analyzed based on the results. The fetched results are displayed in comma separated values (CSV).
Module Description:
The Proposed work can be divided into a number of modules as shown below.

Database details
Result analysis
Analysis representation

Database details:
Student details:
In student details module both the entry and view of the student details can be done. All the details are taken directly from database. After that only required details will be displayed to confirm the entry of the database.

Staff Details:
In staff details module both the entry and view of the staff details can be done. All the details are taken directly from the database and checked for duplication. Then the details will be checked with the database and confirm the staff entry.

Subject Details:
In the subject details module the entry and the view of the subject details can be done. All the details of the subjects like subject name subject code and the department id are maintained in the database which are used for analyzing purpose.

Mark Details:
In the mark details module the entry and the view of the mark details can be done. All the details like student registration number, marks, semester, department name, department id, subject code, subject name are maintained in the database which are used for analyzing the data.

Result Analyzes:
Admin Details:
In admin details module, the list of HOD working in the college is maintained, through which the list of staff comes under each HOD is represented. The admin can view the result of the whole college.
Student Details:
In this module the student details like student registration number, student name, department name, department id, semester, subject code, subject name are in the database. Then the details are fetched from the database and analyzed and then graph is generated for each student.

Semester Mark Details:
In this module the student details like semester number, student registration number, student name, marks, department name, subject code, subject name are in the database. These details are analyzed to calculate results based on semester and graphically represented.

In this module the student details like semester number, student registration number, student name, marks, department name, subject code, subject name are in the database. These details are analyzed to calculate results based on semester and graphically represented.

Staff Details:
In this module the staff details like their name, staff id, handling subject name, subject code, department name and department id are in the database. And here the results are analyzed based on the subject which is handled by the respective staff.
Subject Details:
The subject details module includes subject name, id and the staff handling the subject will be entered and stored in database. In this, the details will be retrieved and used as per the requirement and the results are analyzed and represented in a graph manner for easy understanding.

Other Details:
In these modules, if the staff is handling a subject for two classes means the results are to be analyzed according to their class wise so the column name section is added to the table.

Conclusion:
Programs must continuously improve the performance of the system to make it more efficient and valuable to current and future users. The key is not only “lesson learnt” but more importantly “lessons to be used”. When metrics cease to be useful, when comparison data is no long applicable, or when alignment is broken due to changes and policy, adjustment must be made in timely manner. The benefits of this approach, includes graph generation through result analyzes which are fetched from the college database. Creating an application that recognizes individuals is a very powerful tool to motivate and improve the performance of the students. There are number of ways to recognize the students that are effective other than rewards. In future, the college should provide a high speed internet connection. Then this project should have to be enhanced as an android mobile application without the internet connection. The goal of recognition should be achieved by this application through different ideas and approaches possible.

REFERENCES