

Project I

"Multimedia Data Repository for Event Information System "

Submitted in partial fulfillment of the requirements for the degree of
Bachelor of Engineering

by

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This is to certify that the project entitled *Multimedia Data Repository For Event Information System* is a bonafide work of Siddiqui Neha Hafiz Neelofar (14CO09), Khan Aaisha Imtiyaz Shehnaz (16DCO53), Ansari Mohd Saeem Mohd Saleem Farzana (15CO12), Ansari Mohamadkurban Abdulkayyum Sajma (15CO13) submitted to the University of Mumbai in partial fulfillment of the requirement for the award of the degree of **Bachelor of Engineering** in **Department of Computer Engineering**.

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Declaration

We declare that this written submission represents our ideas in our own words and where others ideas or words have been included, we have adequately cited and referenced the original sources. we also declare that we have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in our submission. we understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

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Abstract

Title: Multimedia Data Repository for the Event Information System

It is essential to attend curricular or extra curricular activities held in different location for personal as well as institutional benefits we found it quit different to manage those activities attended by students as well as faculties; In the view of managing the bulk of documentation also in co-ordination of only attending the event, institute can host multiple intra-college or inter college events and organizing the documents of those events can rather be a tedious task

To overcome this problem our repository system will help a lot. This system can maintain attended or organized event, with the help of these data stored in the repository a report will be generated which will be only seen by an event organizer to maintain the record of the data stored in the systems repository.

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Keywords And Glossary

Keywords : Multimedia Data Repository, SHA256, AES, RSA, Gzip, ImageGear, Report Generation.

Glossary :

A

Advanced Encryption Standard (AES):

The Advanced Encryption Standard (AES), algorithm is known by its original name Rijndael it's a specification for the encryption of electronic data. It's a variant of Rijndael which has a fixed block size of 128 bits, and a key size of 128, 192, or 256 bits. By contrast, Rijndael per se is specified with block and key sizes that may be any multiple of 32 bits, with a minimum of 128 and a maximum of 256 bits.

G

gzip:

gzip is a file format and a software application used for file compression and decompression. It is a free software replacement for the compress program used in early Unix systems.

I

ImageGear:

It is a ASP.NET image processing library for enterprise applications. ImageGear for .NET easily integrates enterprise-class file viewing, annotation, from scanning and document creation through printing, viewing, and archiving, in the ImageGear's library. It's a toolkit that demonstrates SDK technologies including file viewing, OCR, PDF, document cleanup, annotation and more.

M

Multimedia Data Repository:

Multimedia database repository it's a collection of interrelated multimedia data that includes text, graphics, images, animations, video, audio etc and have vast amounts of multi-source multimedia data. It is based on a data repository where users can organize and generates the reports of the events.

R

Report Generation:

In this system we are generating the report by taking the input of all the modules present in the system and then the report is generated.

Rivest-Shamir-Adleman (RSA):

RSA is a public-key encryption technology developed by RSA Data Security. This algorithm is based on the difficulty in factoring very large numbers. Based on the principle of, the RSA encryption algorithm it uses the prime factorization as per the trap door for encryption. Here it deduces the RSA key, therefore, It takes a huge amount of time and processing power. It's the standard encryption method for important data, especially data that is transmitted over the Internet.

S

Secure Hash Algorithm 2(SHA-256):

SHA-256 is one of the successor of hash functions to SHA-1 (collectively referred to as SHA-2), and it is one of the strongest hash functions available. The 256-bit key makes it a good partner-function for AES.

Chapter 1

Introduction

1.1 Statement of Project

Our project promises to reduce the workload of paper work with an approach of generating the report of the events organized for institutes and organization in the form of .pdf or .docx format.

In our System we are going to categorize the events into two different parts the first one is to organize the events and the another one is for attendant event, It's up-to the user in which event he/she wishes to participate in the event. And the working of both the categorized events are same i.e. taking attendance, feedback, providing the resource material, but in an organized event user need to provide the budget and user need to get the approval letter of the event and at the end our system is going to generate the report and that report is going to be stored in the database.

1.1.1 Motivation

If we want to organize any event, event's organizer and event's coordinator faces many difficulties. To overcome to this difficulties we are implementing this system which will help us to generate a report of it. And this System is going to maintain the data on the cloud which will help the faculties of the institute to get access of the shared report related to the event organized. It will also take the attendance of the attendees participating in the particular organized event, generate the report and the event organizers will be submitting the report of the events organized to the institute.

1.2 Objective

This project will help the institutes for maintaining and storing the details of the event by generating it in the form of report and further it can be accessed by them

Following are the objective of this system

- To store all the detail information and data related to events.
- To take attendance while events are going on.
- To take feedback about the event

1.3 Scope

Proposed System is a Data Repository system which help the institutes for monitoring or storing the details of the event by generating it in the form of report.

1.3.1 Project Architecture

We are having two type of users in our system, one is student and another one is faculty. First user will Register then it will go into event categorizer where we have categorized the event into two parts. One is organized and second one is attendee after that its up to user what he/she want to do. Suppose user select organized event for that first user need to upload the budget and approval letter of that event. In between event feedback and attendance will be taken through our module. For attendance user click the photo and upload the photo after that our system fetch system and location if both the match with event date and location the attendee mark as a present. The list of attendees and source person will go into feedback module and in feedback it also mark as present. Bill of that event, study material and , attendance and feedback will go into database . Report generator module will take these input and generate the report in the form of .pdf or .docx with the help of imageGear. Encryption and Decryption of file will done with the help of AES and RSA. For comprising the file With Gzip file will store into database.

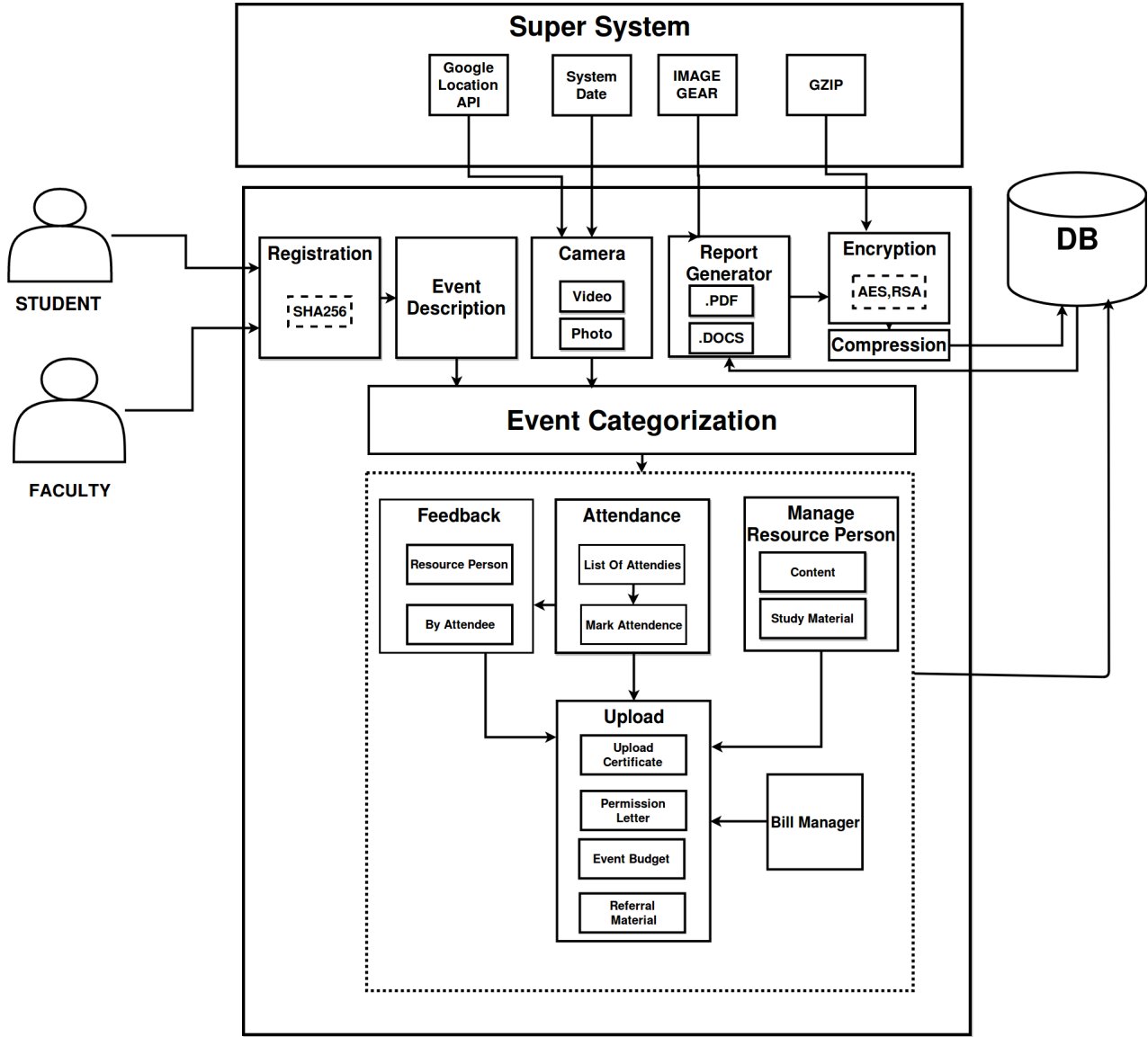


Figure 1.1: System Architecture

Chapter 2

Literature Review

2.1 Science Db : A public multidisciplinary research data repository for e-science(1)

Science DB is a multidisciplinary data repository aiming to promote the preservation, publication and reuse of research data. Researchers use it for storing, managing and sharing their research data and it helps journal publishers host data underlying articles without buying more infrastructure. Moreover it allows research projects or teams to preserve and share their data according to their flexible demands.

2.1.1 Advantages

- Data Collaboration : Data Collaboration can be define as "Visualization of data from many data source to right user in the correct format."

2.1.2 Weaknesses

- Security : This paper has not mention any security algorithms or protocol to secure the user's password and encrypting the researcher paper.This can be count as a big issue.
- Platform Dependent : This proposed idea is only implimented in web.

2.1.3 How to Overcome

- Security : In our System we are using SHA256 for hashing the user's password and RSA to encrypt the generated report of any event.
- Cross Platform : We are implementing our system in xamarin which is a cross platform development.Using xamarin we can develop apps that run natively on different devices.

2.2 Multimedia Repository for online education Content.(2)

This paper proposes an architecture of a multimedia repository for online educational content, that helps to manage the continuously growing amount of electronic learning material. It is designed to manage a large amount of interactive multimedia learning material, provides a centralized access to all stored content

2.2.1 Advantages

- Remote Access Facility : This system can be access by anywhere anytime.
- Distributed Database : This system have distributed database which increases the efficiency.

2.2.2 Weaknesses

- Security : This paper has not mention any security algorithms
- Compression: Data Compression is necessary because it increases response time and make system slower.This paper does not mention how to handle large file.
- Encryption : All Study material should be in encrypted form so any other man in middle will be unable to access the material.

2.2.3 How to Overcome

- Security : In our System we are using SHA256 for hashing the user's password and RSA to encrypt the generated report of any event.
- Compression : To handle large file and making system faster we are using Gzip compression algorithm that compress large file into smaller one in order to decrease processing time.

2.3 Design Implementation of Multimedia Repository System Based on Middle Tier Structure.(3)

This paper summarizes the current mainstream web file Upload methods and presents difficulties realizing the Cloud repository media resource management System on large file upload. It proposes specific solution. In which they use the FileList interface and Blob of File API to segment a single large file before upload to server, making the upload of media files without restrictions. It uses Python as its middle tier. Provides better system scalability and the core middle Module is only responsible for monitoring and transferring the socket command from the server-side request.

The Socket command between PHP program and task allocation. Core middle tier module makes transaction between different languages possible and lowers the coupling between the various system modules. That means, specific Processes in the server are assigned into corresponding modules, making tasks for each module relatively independent and specific, thus the maintainability and Expansibility of the system are able to be guaranteed.

2.3.1 Advantages

- Security : While uploading the File It provides Security , it opens the File in read only Mode.
- Distributed Database : This system have distributed database which increases the efficiency.

2.3.2 Weaknesses

- Upload File Size Restriction : This system won't allow you to upload larger file.

2.3.3 How to Overcome

- Upload File Size Restriction : We are using Compression algorithm Gzip so we can handle large.

2.4 Browsing A Structured Multimedia Repository(4)

The browsing user interface for the structured multimedia repository was implemented with Web-based technologies. As most users are comfortable on interacting with the Web, this will ease interaction with the browsing user interface. Simple multitasking is also leveraged just by opening a new window or tab in the browser, enabling its fast response. Another direct consequence is the instant availability of the user interface (no software installed on the client side), increasing its dissemination and usage. The repository was implemented on top of eXist (5), a native XML database. This decision allows using XML formats for document structures (6), metadata and relations. Also, using an XML database allows for volatile data schemes, as opposed to relational databases. Consequently, any ontology instance can be inserted on multimedia fragments metadata, thus enforcing extensibility to any knowledge inference mechanism. Executing queries on the repository is performed with XQuery (7). Different abstraction layers on information retrieval have been implemented, and may be used in the future as basic constructs for smarter mechanisms. On top of XQuery modules, the browsing interface has been implemented as a thin layer returning XHTML. On top of the user interface, a set of unobtrusive javascript functionalities were added to improve the usability of its browsing characteristics. This way, tasks that require high computational resources (e.g., complex searching within the repository) can be triggered asynchronously, leveraging the user interface responsiveness.

2.4.1 Advantages

- Using XML as your database will work fine as long as your datasets stay relatively small. Meaning, it can all fit in memory and stay there comfortably.

2.4.2 Weaknesses

- Once your data grows to the point where it will not all fit in memory, you will probably start seeing serious performance degradation.
- The system requires large memory to store large content.
- In this system we can't directly search the required content

2.4.3 How to Overcome

- We are using Gzip compression algorithm for compressing the large content.
- Implementing a interactive search bar one can search the required content directly

2.5 Literature Summary

Features	ScienceDb	Education	3 Tier	Structured	proposed System
Data Collabo- ration	Yes	No	Yes	Yes	Yes
Encryption	No	No	No	No	Yes
Security	No	No	No	No	Yes
Storage	Yes	No	No	Yes	Yes
Report Gener- ation	No	No	No	No	Yes
Platform De- pendency	Yes	Yes	Yes	Yes	No
Remote Access	Yes	Yes	Yes	Yes	Yes

Table 2.1: Literature Summary

Chapter 3

Technical Details

3.1 Methodology

We are going to implement this project using xamarin which is cross platform Mobile development use to develop all the native app simultaneously. For making repository database we are using azure cloud which is faster and can remotely access. For hashing the password we are using SHA256 algorithm. For compression we are using Gzip library. Last thing we are using AES, RSA for encrypting and decryption the reports to provide fully security.

3.1.1 Use Case

We are having two type of users in our system, one is student and another one is faculty. First user will Register then it will go into event categorizer where we have categorized the event into two parts. One is organized and second one is attendee after that its upto user what he/she want to do. Suppose user select organized event for that first user need to upload the budget and approval letter of that event. In between event feedback and attendance will be taken through our module. After the event completed system will going to generate the report of the event in which we are having input from all the modules i.e bill of the event , resource of the event , list of attendees and feedback.

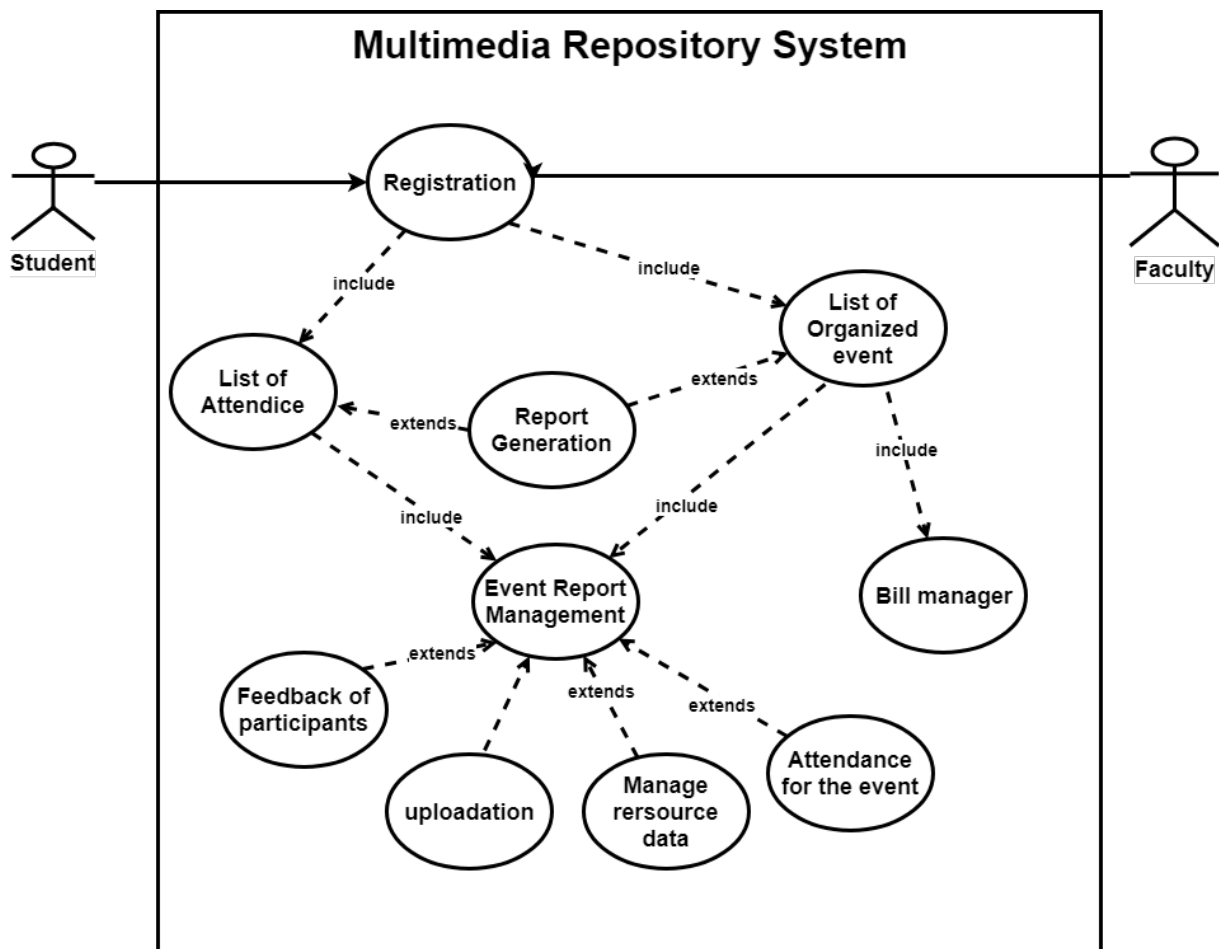


Figure 3.1: Use Case

3.1.2 Modular Diagram of User Registration

- In our system we are having multi role of users like participants (In-house or Outer), faculty , event coordinators and event organizer etc.
- User register in our system.
- User's Credential will get hash using SHA256 algorithm.

3.1.3 Modular diagram of Upload

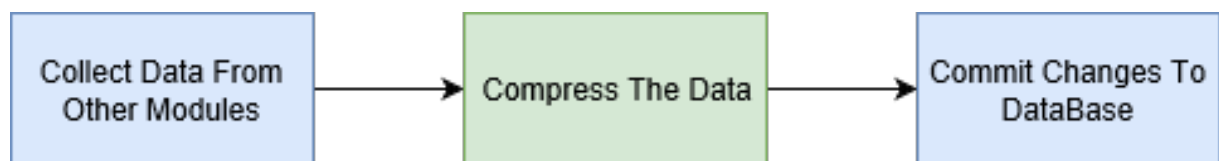


Figure 3.2: Upload Module

- In this module users can upload data related to events.
- Larger data such as image or videos get compressed before storing to database.

3.1.4 Modular diagram of Attendance:

- This module will take attendance of both attendee and organized in ATT format.
- Attendee will upload a pic of the event then our system takes system date time and location.
- If this date time and location is match with event's date time and location then a ATT format sheet will generate which have list of all attendee

3.1.4.1 Modular Diagram For Organize The Event:



Figure 3.3: Event Organize Module

- Attendees Register into the system though camera module we will gate the list of attendees.
- With system date and event location we will come to know who are present at that event and mark as a present

3.1.4.2 Modular Diagram For Attendant The Event:

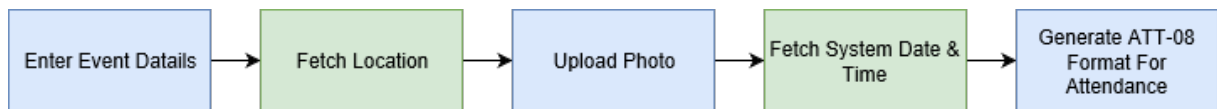


Figure 3.4: Event Attendee Module

- This module will take attendance of both attendee and organized in ATT format.
- Attendees Register into the system though camera module we will gate the list of attendees.
- With system date and event location we will come to know who are present at that event and mark as a present.
- Report will be generate in ATT-08 form.

3.1.5 Modular diagram of Report Generator

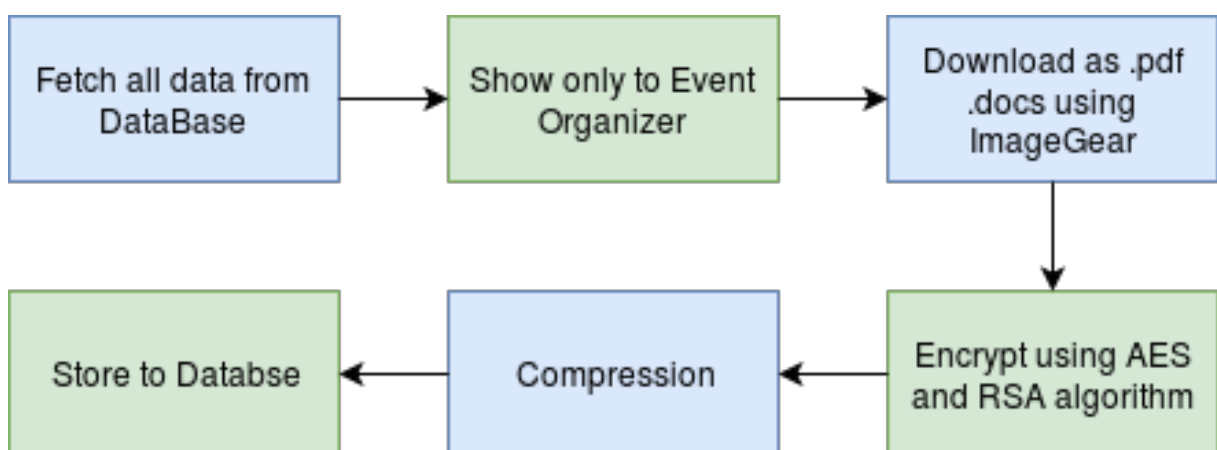


Figure 3.5: Report Generator Module

- One of the most important module of the system.
- Input of the all the module will store into database.
- With that data we will generate report of event and store the report into our repository.

- This module is only for Event-organizer
- This report can be download as .pdf and .docx format by using ImageGear Library.

3.1.6 Modular diagram of Compression

- Since it is a multimedia data repository hence we have to store large data like image , videos .
- To overcome storage problem we use compression to reduce the size to large data.
- Compressed data will be stored to our database.
- This will also increase the response time and efficiency of system

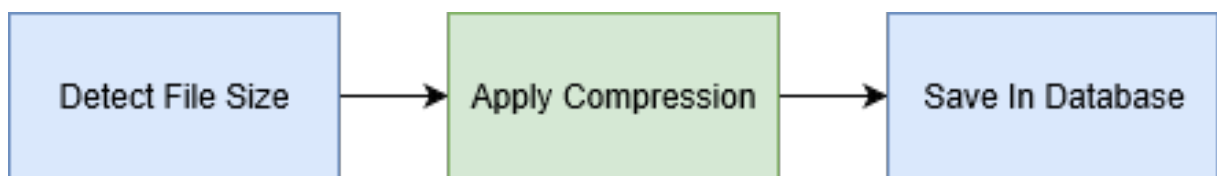


Figure 3.6: compression Module

3.1.7 Modular diagram of Security

- For securing Users Credential we are going to use SHA256

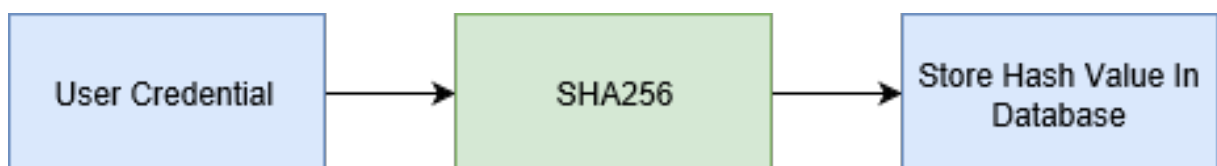


Figure 3.7: Security Module

3.2 Project Requirements

3.2.1 Implementation Requirements

Following are the minimum requirements for the softwares which we are using for implementation:

3.2.1.1 Software Requirements

- **Microsoft visual studio 2017:** Visual Studio 2017 is used to develop apps for Android, iOS, Windows, Linux, web, and cloud. Code fast, debug and diagnose with ease, test often, and release
- **Xamarin:** Xamarin is a cross platform tool to implement mobile app that works on all native app
- **Microsoft Azure for cloud computing :** is a managed cloud database (SaaS) provided as part of Microsoft Azure.
- **DirectX-9 :** This is just a dependency required for visual studio to run.
- **Microsoft Visual C++ Redistributor** Microsoft Visual C++ Redistributable

3.2.1.2 Hardware Requirements

1. Following are the software requirements of the project.

- 40GB hard disk space.
- 2.3HZ processor.
- 4GB RAM.

3.2.2 Deployment Requirement

Following are the minimum deployment requirements :

3.2.2.1 Software Requirements

- **Android 5.0+:** In order to run this app one should have android version 5.0 or above.
- **iOS 8.0+:** In order to run this app one should have iOS version 5.0 or above.

3.2.2.2 Hardware Requirements

1. Following are the software requirements of the project.

- 8 GB Storage
- GPS
- 1GB RAM.

Chapter 4

Market Potential

4.1 Market Potential of Project

Following are the product that are available in market

- Science DB :Science DB aims to create a centralized database of scientific research performed at research universities and institutes across the country. Scientists at leading research universities/institutes contribute summaries of their own or other's research papers to our database. Each summary is reviewed by our volunteer editors before added to the database to ensure accuracy and accessibility of the content.
- OER:OER Commons is a public digital library of open educational resources. Explore, create, and collaborate with educators around the world to improve curriculum.OER Professional Learning programs support instructors and curriculum specialists to gain the necessary skills required to find, adapt, and evaluate high quality open materials.

4.2 Competitive Advantages of Project:

- Cross Plate-form : This is one of the major advantage of our project. Our system will be available for all native app like Android and IOS.
- Security : Our system provide full security to confidential data.
- Compression : Our system can handle large file with small response time.
- Reduces Manual Work : Our system will reduces the manual human and paper based work that will automatically increase the efficiency.

Chapter 5

Conclusion and Future Scope

5.1 Conclusion

Our System will decrease the manual workload, generate the report of all the details of the event organized in the form of .pdf and .docs file gives feedback and store it into our data repository system.

It will be more accurate and secure by maintaining the security of the system, the data is being updated into the database of our Multimedia Repository System.

5.2 Future Plans

- Predict the Success of held Event in future: In future we will implement this module to predict the success rate of any event which was previously held
- Unique QR code for each report This features will give unique QR code to every report so it can share and access easily.

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Appendix I

Xamarin:

Xamarin Form is a Microsoft-owned San Francisco, California-based software company founded in May 2011 by the engineers that created Mono, Mono for Android and MonoTouch, which are cross-platform implementations of the Common Language Infrastructure (CLI) and Common Language Specifications (often called Microsoft .NET).

It uses C-shared codebase, developers can use Xamarin tools to write native Android, iOS, and Windows apps with native user interfaces and share code across multiple platforms, including Windows and macOS.

It claims to be the only IDE that allows for native Android, iOS and Windows app development within Microsoft Visual Studio. Xamarin supplies add-ins to Microsoft Visual Studio that allows developers to build Android, iOS, and Windows apps within the IDE using code completion and IntelliSense. Xamarin for Visual Studio also has extensions within Microsoft Visual Studio that provide support for the building, deploying, and debugging of apps on a simulator or a device.

Microsoft Azure SQL Database:

Microsoft Azure SQL Database : (formerly known as SQL Azure, SQL Server Data Services, SQL Services, and Windows Azure SQL Database) is a managed cloud database (SaaS) provided as part of Microsoft Azure.

It's a cloud database is a database that runs on a cloud computing platform, and access to it is provided as a service. Managed database services take care of scalability, backup, and high availability of the database. Azure SQL Database is a managed database service which is different from AWS RDS which is a container service.

It includes built-in intelligence that learns app patterns and adapts to maximize performance, reliability, and data protection.

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