



P.G DEPARTMENT OF COMPUTER SCIENCE

K.A.H.M UNITY WOMEN'S COLLEGE

P.O Narukara , Manjeri , Malappuram - 676122

Govt.Aided & Affiliated to University of Calicut

Nationality reaccredited by NAAC with CGPA 2.77 & B++ Grade

SECURE CLOUD DATA DEDUPLICATION WITH EFFICIENT RE-ENCRYPTION

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Submitted To

UNIVERSITY OF CALICUT,in practical fulfillment of the
Requirement for the award of degree:
BACHELOR OF SCIENCE IN COMPUTER SCIENCE

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CERTIFICATE

Project Certificated for B.Sc. Computer Science Students

Certified that this project titled **SECURE CLOUD DATA DEDUPLICATION WITH EFFICIENT RE-ENCRYPTION** is the confide work of **Ms.FATHIMA JUBIN PK (Register No: UTATSCS005)** Semester B.Sc. Computer Science who carried out the work under my supervision in partial fulfillment for the Degree of Bachelor of Science during the academic year 2019-2022. Certified further that to the best of my knowledge this report had not been submitted for any other examination and does not form any other course undergone by the candidate.

SHIHABUL HAQ M
Assistant Professor
PG Department of Computer Science

Date:

Place: Manjeri

Internal examiner

External examiner

DECLARATION

We wish to state that the work embodied in this project titled **SECURE CLOUD DATA DEDUPLICATION WITH EFFICIENT RE-ENCRYPTION** forms my own contribution to the project work carried out under the guidance of **SHIHABUL HAQ M**, Assistant Professor, Department of Computer Science. Also we hereby declare that this work is submitted to University of Calicut in fulfillment of requirement for the award of the degree of Bachelor of Computer Science. And this work has not been submitted for any other degree of this or any other University .Whenever references have been made to previous work of others, it has been clearly indicated as such and included in the reference.

FATHIMA JUBIN PK

Place: Manjeri

Date:

ACKNOWLEDGMENT

A project of this dimension would not have been possible without the genuine help and earnest support provided to us from all sources that we approached. This space would not be enough for us to mention all such persons here, but that would not be lessening our gratitude towards them. But it would be unfair we do not express our sincere thanks to those persons who have provided us the greatest support and guidance.

We thank our Principal, **Mr. Saidalavi** and Head of the Department, **Mr. Rahib Bob** from the bottom of our heart. We cordially thank for the support and help given to us by **Mr. Shihabul haq** who guide us well through the project creation.

Last but not least, we thank our family and friends without who's moral and emotional support, this project would not have materialized. They have been instrumental in keeping our confidence level high and hopes alive.

SECURE CLOUD DATA DEDUPLICATION WITH
EFFICIENT RE-ENCRYPTION

ABSTRACT

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After the emergence of the cloud architecture, many companies migrate their data from conventional storage i.e., on bare metal to the cloud storage. Since then huge amount of data was stored on cloud servers, which later resulted in redundancy of huge amount of data. Hence in this cloud world, many data de-duplication techniques has been widely used. Not only the redundancy but also made data more secure and privacy of the existing data were also increased. Some techniques got limitations and some have their own advantages based on the requirements. Some of the attributes like data privacy, tag regularity and interruption to brute-force attacks. To make data reduplication technique more efficient based on the requirements. This paper will discuss schemes that brace user-defined access control, by allowing the service provider to get information of the information owners. Thus our scheme eliminates redundancy of the data without breaching the privacy and security of clients that depends on service providers. Our latest deduplication scheme after performing various algorithms resulted in conclusion and producing more efficient data confidentiality and tag consistency. This paper has discussion on various techniques and their drawbacks for the effectiveness of the reduplication.

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INTRODUCTION

INTRODUCTION

After the emergence of the cloud architecture, many companies migrate their data from conventional storage i.e., on bare metal to the cloud storage. Since then huge amount of data was stored on cloud servers, which later resulted in redundancy of huge amount of data. Hence in this cloud world, many data de-duplication techniques has been widely used. Not only the redundancy but also made data more secure and privacy of the existing data were also increased. Some techniques got limitations and some have their own advantages based on the requirements. Some of the attributes like data privacy, tag regularity and interruption to brute-force attacks. To make data de duplication technique more efficient based on the requirements. This paper will discuss schemes that brace user-defined access control, by allowing the service provider to get information of the information owners. Thus our scheme eliminates redundancy of the data without breaching the privacy and security of clients that depends on service providers. Our latest deduplication scheme after performing various algorithms resulted in conclusion and producing more efficient data confidentiality and tag consistency. This paper has discussion on various techniques and their drawbacks for the effectiveness of the deduplication.

SYSTEM ANALYSIS

SYSTEM ANALYSIS

System analysis is a general term that refers to an orderly, structured process for identify and solving a problem. The system analysis process is calling the life cycle methodology, since it relates to four significant phases in the life cycle of all business information system: study, design, development and operation. The definition of system analysis includes not only the process but also the process of putting together to form a new system. A system analyst is an individual who performs system analysis during any, or all, of the life cycle phases of a business information system. The system analyst not analyses business information system problems, but also synthesizes new to solve those problem or to meet other information needs.

The various techniques used in the study of the present system are:

- Observation
- Interviews
- Site visits
- Discussion

EXISTING SYSTEM

A number of deduplication systems have been proposed based on various reduplication strategies such as client-side or server-side reduplications, file-level or block-level reduplications. Bellaire et al formalized this primitive as message-locked encryption, and explored its application in space efficient secure outsourced storage. There are also several implementations of convergent implementations of different convergent encryption variants for secure deduplication. Li addressed the key- management issue in block-level deduplication by distributing these keys across multiple servers after encrypting the files. Showed how to protect data

confidentiality by transforming the predictable message into a unpredictable message. Data reliability is actually a very critical issue in a deduplication storage system because there is only one copy for each file stored in the server shared by all the owners. Most of the previous deduplication systems have only been considered in a single-server setting. The traditional deduplication methods cannot be directly extended and applied in distributed and multi-server systems.

PROPOSED SYSTEM

Our proposed constructions support both file-level and block-level deduplications.

Security analysis demonstrates that the proposed deduplication systems are secure in terms of the definitions specified in the proposed security model. In more details, confidentiality, reliability and integrity can be achieved in our proposed system. Two kinds of collusion attacks are considered in our solutions. These are the collusion attack on the data and the collusion attack against servers. In particular, the data remains secure even if the adversary controls a limited number of storage servers.

MODULE DESCRIPTION

MODULEDESCRIPTION

MODULES

TECHNICALMODULE

Deduplication

Input file

Hash generation using MD5

Log hash

Verify preview hash upload

MODULES:

Admin:

Register &Manage employee

Manage Department

Work Register

Upload & Download documents

Chat engine

Send Notification

View complaint & Post reply

Employee:

Login

[View works](#)

[Progress update](#)

[Upload & Download documents](#)

[Chat engine](#)

[View notification](#)

[Post complaints & View reply](#)

METHODOLOGY OF THE STUDY

FEASIBILITYSTUDY

Feasibility is defined as the practical extent to which a project can be performed successfully. The objective of feasibility study is to establish the reasons for developing the software that is acceptable to the users, adaptable to changes and conformable to the established standards.

Various types of feasibility that are commonly considered include:

Technical Feasibility

Economical Feasibility

Behavioral Feasibility

Operational Feasibility

Technical feasibility

Technical feasibility is the process of checking the availability of the technical resources required to develop an application. Python and MySQL are the technologies we use to develop our systems. This technology is available and can be used. This is a web application, every user can access this system remotely. Therefore this system is technically feasible

Economic feasibility

Economic feasibility determines whether the proposed system is capable of generating financial gains for an organization. It involves cost incurred on the software development team, estimated cost of hardware and cost of performing feasibility study and so on. This system is designed to be useful to the public. So the system can be used by the public for free. Therefore, it is economically feasible.

Behavioral feasibility

The present system is easily understandable. The maintenance and working of the new system needs less human effort. All the behavioral aspects are considered carefully and have found the project is behaviorally feasible.

Legal Feasibility study

If it is asked legally feasible, said it is legally feasible. No privacy constrains issues are included in this project as no personal details are shared. Therefore This system is legally feasible.

Schedule Feasibility

Schedule feasibility is the process of setting a time limit and checking whether the project can be completed within that time period. That is, time to finish. I'm completed the project in particular time. So it is feasible on schedule.

Operational feasibility

This system is Operational Side That is a working project. It's run completely. It was a bit of an error the first time. It's been corrected. The working copy was received by the public user (patients), the doctor, the clinic assistant and the pharmacist. Therefore, this application act as a way of provides information others. Therefore, Turf keeper is in operationally feasible..

SYSTEM REQUIREMENT SPECIFICATION

Requirement analysis is a software engineering task that bridges the gap between system level software designs. We have done the requirement analysis in order to understand the problem faced in our objectives. The emphasis in requirement analysis is on identifying from the system, not how the system will achieve this goal

2.6 Hardware and Software specification

SYSTEM SPECIFICATION

Hardware Specification

The selection of hardware is very important in the existence and proper working of any of the software. When selecting hardware, the size and capacity requirements are also important. The hardware must suit all application developments.

Processor	:	i3 or above.
System Bus	:	32Bit or 64Bit
RAM	:	4 GB or Above
HDD	:	500 GB or Above
Monitor	:	14” LCD or Above
Key Board	:	108 Keys
Mouse	:	Any Type of mouse

Software specification

One of the most difficult tasks is selecting software, once the system requirement is find out then we have to determine whether a particular software package fits for those system requirements. This section summarizes the application requirement.

Operating System	:	Windows 10 Any 32 bit or 64 bit platform
Front End	:	Python
Back End	:	My SQL Sever

IDE :Python 3.6 or above

: PyCharm

SYSTEM DESIGN

SYSTEM DESIGN

System design is the second phase of the system lifecycle. The detailed design of the system selected in the study phase is accomplished in the design phase. The principal activity performed during this phase includes allocation of function between computer programs equipment and manual tasks and data base design and test requirement definition. In the course of design phase, the performance specification is expanded into the design specification. The user oriented base line prepared in study phase becomes a base line document, oriented to the needs of the programmers and other professional who will actually develop the system. A design phase report is prepared after the completion of design phase activities and the review is held with the user organization in order to determine whether or not the computer based business information system project is ready to the development phase.

INPUT DESIGN

Input design is a part of the overall system design, which requires very careful attention. Often the collection of input data is the most expensive part of the system, in terms of both the equipment used and people involved. If the data going into the system is incorrect, then the processing and out put will magnify the errors. Thus the clear objectives of input design are:

- To produce a cost-effective method of input.

- To achieve the highest possible level of accuracy.

- To ensure that the input is acceptable to and understood by the user.

OUTPUT DESIGN

The output design is done so that the result of processing could be committed to the user and to provide a hard copy of these results and evaluations for later consultations. Effective output design will improve the clarity and performance of outputs. Output design phase of the system is concerned with the convergence of information' s to the end user friendly manner. The output

design should be efficient, intelligible so that system relationship with the end user is improved and there by enhancing the process of decision making. Outputs from the computer systems are required primarily to communicate the results of the processing to the users. They are also used to provide a permanent copy of these results of processing to the users. They are also used to provide a permanent copy of these results for late consultation. There are various types of output required by most systems, the main ones are:

External outputs, whose destinations outside the organization and which require special attention because they project the image of the organization,.

Internal outputs, whose destination is within the organization and which require careful design because they are the user's main interface with the computer.

Operational outputs, whose use is purely within the computer department.

Turn around outputs, to which the data will be added before they are returned to the computer for further processing.

REQUIREMENTS MODELING

Data Flow diagram

Data flow diagram is used to define the flow of the system and resources such as information. Data flow diagram are a way of expressing system requirement in a graphical manner. DFD represents one of the most ingenious tools used for structured analysis. DFD is also known as bubble chart. It has the purpose of clarifying system Requirements and identifying major transformations that will become programs in system design.

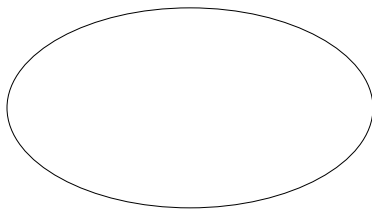
In the normal convention, logical DFD can be completed using only 4 notations



: External Entity



: Data Flow



: Process



: Data Store

- To construct a dataflow diagram, we use
 - Squares representing external entities, which are sources or destinations of data.
 - Rounded rectangles representing processes, which take data as input, do something to it, and output it.
 - Arrows representing the data flows which can either, be electronic data or physical items.
 - Open-ended rectangle representing data store including electronic store such as database or XML files and physical stores such as or filing cabinets or stack of paper.

PROCESS:

A process transforms incoming data flow into outgoing data flow.

DATA STORE :

Data store are repositories of data in the system. They are sometimes also referred to as files.

DATA FLOW :

Dataflow are pipelines through which packets of information flow. Label the arrow with the name of the data that moves through it.

EXTERNAL ENTITY :

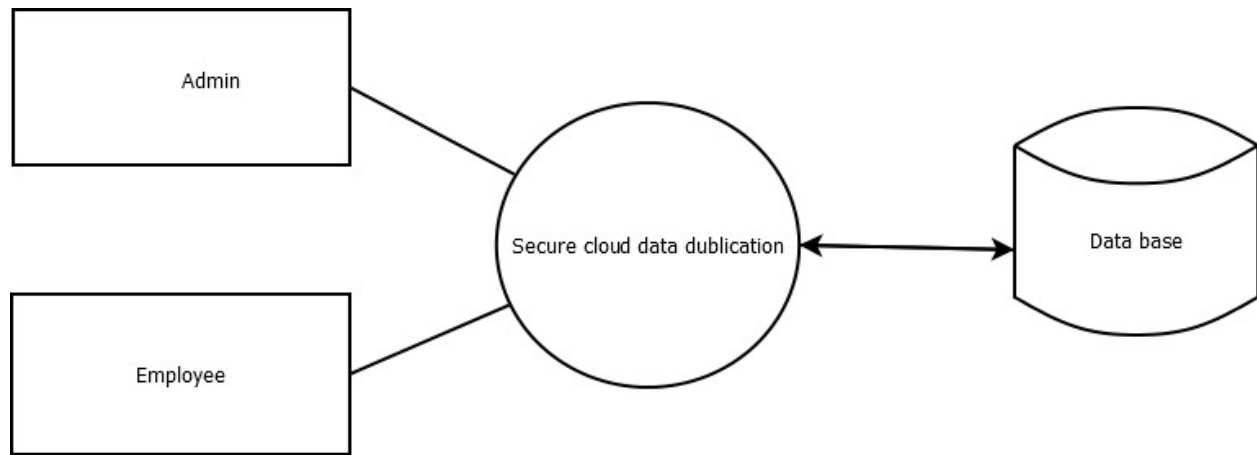
External entities are objects outside the system with which the system communicates.

External entities are sources and destinations of the systems inputs and outputs.

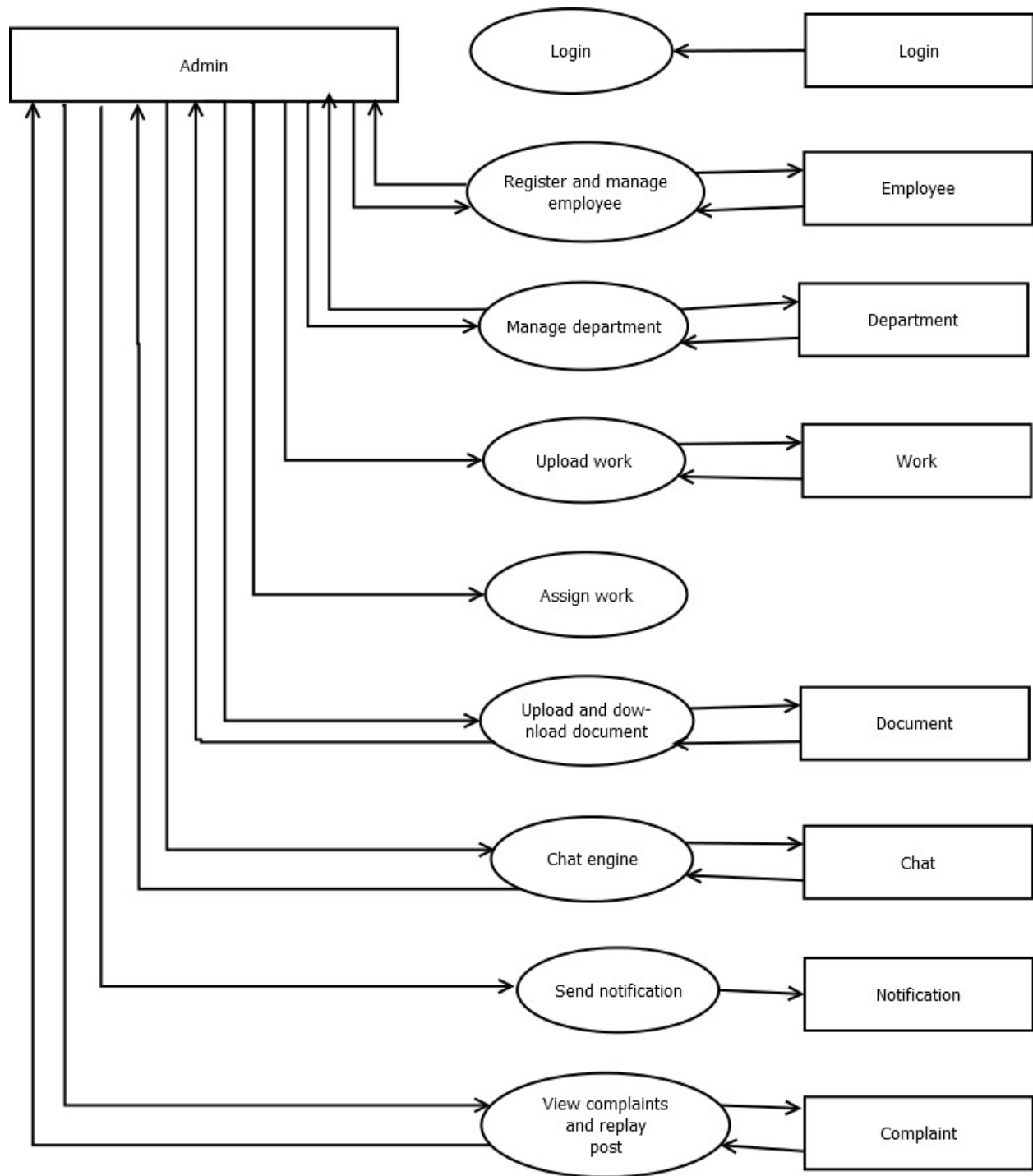
DATA FLOW DIAGRAM LAYERS :

Data flow diagrams in several nested layers. A single process node on a high level diagram can be expanded to show a more detailed data flow diagram. Draw the content diagram first, followed by various layers of data flow diagrams.

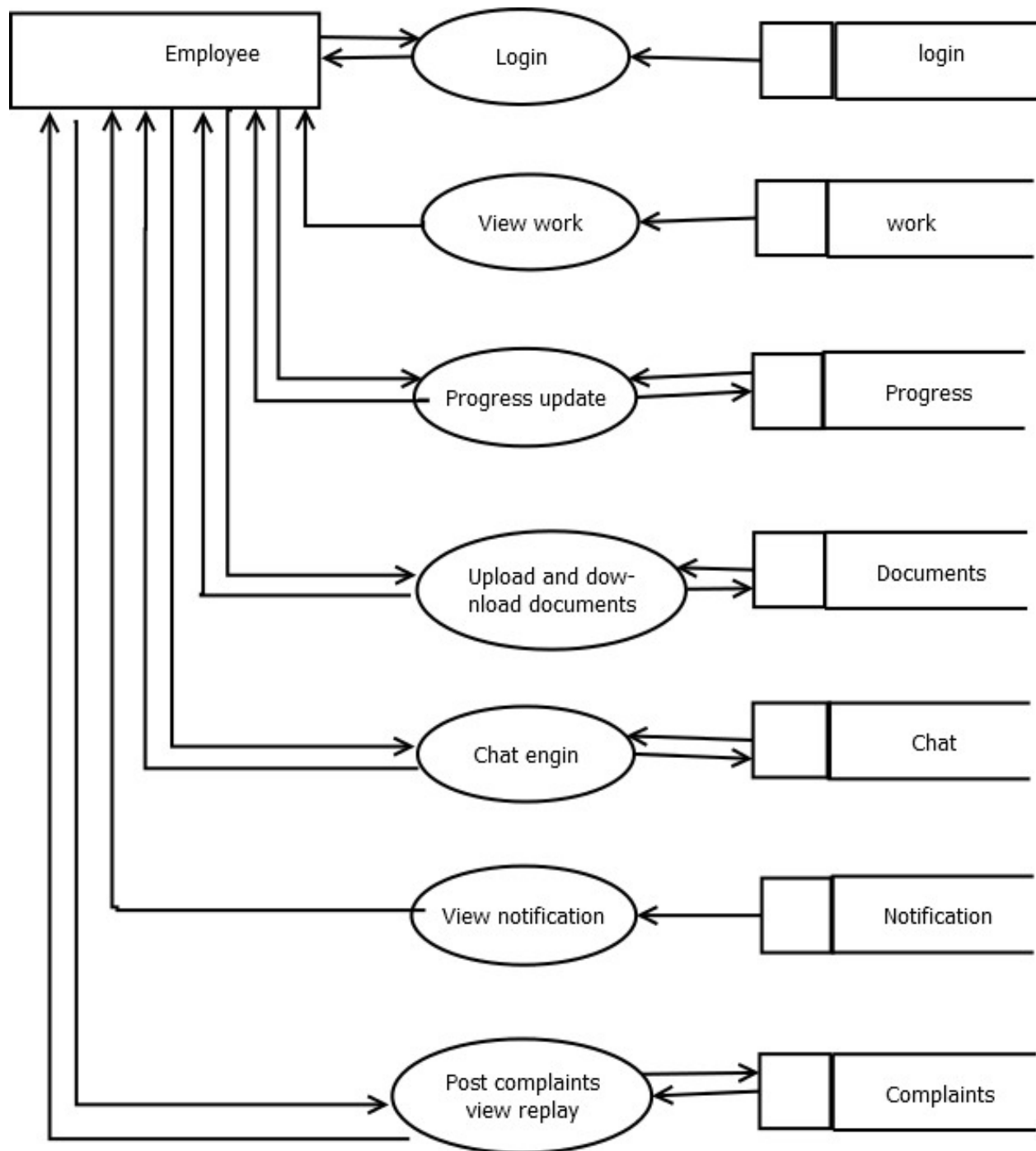
Level-0



Level-1: Admin



Level-2: Employee



Entity Relationship diagram

An entity relationship diagram is a data modeling technique that creates a graphical representation of the entities and the relationship between entities within an information system. An ER model is an abstract way to describe a database. Describing a database usually starts with a relational database, which stores data in tables. Some of the data in these tables point to data in the other tables.

An entity may be defined as a thing which is recognized as being capable of an independent existent and this can be uniquely identified. An entity is an abstraction from the complicity of a domain. When we speak of an entity, we normally speak of some aspect of the real world which can be distinguished from other aspects of the real world.

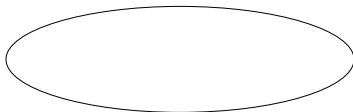
❖ Three basic elements in ER model includes :

- Entities are the things about which we seek information
- Attributes are the data we collect about the entities
- Relationships provide the structure needed to draw information from multiple entities

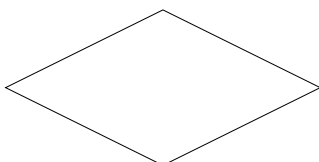
E-R Diagram Symbols



: Entity

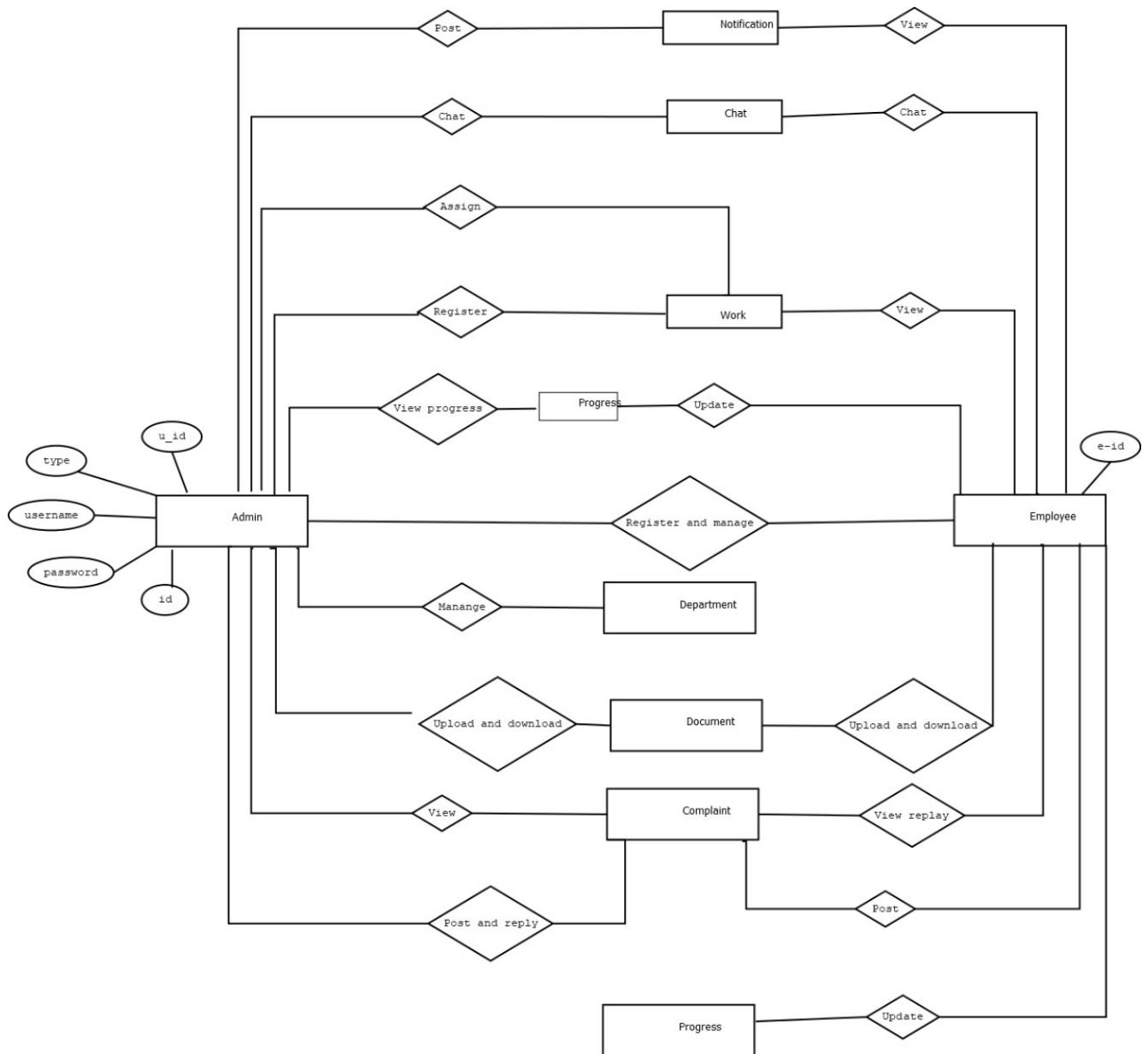


: Attribute



: Relation

: Connection



DATA BASE DESIGN

LOGIN:

FIELD NAME	DATA TYPE	CONSTRAINTS
L_ID	Integer	Primary key
U_NAME	Varchar(50)	Not null
PASSWORD	Varchar(50)	Not null
TYPE	Varchar(40)	Not null
U_ID	Integer	Forin key

EMPLOYEE:

FIELD NAME	DATA TYPE	CONSTRAINTS
E_ID	Integer	Primary key
NAME	Varchar(50)	Not null
DOB	Varchar(30)	Not null
CONTACT	Varchar(15)	Not null
EMAIL	Varchar(50)	Not null

WORK:

FIELD NAME	DATA TYPE	CONSTRAINTS
W_ID	Integer	Primary ket
WORK	Varchar(50)	Not null
SUD_DATE	Date	Not null
TIME	Time	Not null
STATUS	Varchar(50)	Not null
E_ID	Integer	Foreign key

CHAT:

FIELD NAME	DATA TYPE	CONSTRAINTS
CH_ID	Integer	Primary key
CHAT	Varchar(500)	Not null
TIME	Time	Not null
DATE	Date	Not null
FROM_ID	Integer	Foreign key
TO_ID	Integer	Foreign key

NOTIFICATION:

FIELD NAME	DATA TYPE	CONSTRAINTS
N_ID	Integer	Primary key
NOTIFICATION	Varchar(200)	Not null
TIME	Time	Not null
DATE	Date	Not null

DOCUMENTS:

FIELD NAME	DATA TYPE	CONSTRAINTS
D_ID	Integer	Primary key
E_ID	Integer	Not null
TITLE	Varchar(50)	Not null
DOCUMENT	Varchar(50)	Not null
TIME	Time	Not null
TYPE	Varchar(30)	Not null

DEPARTMENT:

FIELD NAME	DATA TYPE	CONSTRAINTS
DE_ID	Integer	Primary key
DEPARTMENT	Varchar(50)	Not null

COMPLAINTS:

FIELD NAME	DATA TYPE	CONSTRAINTS
C_ID	Integer	Primary key
DATE	Date	Not null
TIME	Time	Not null
USER_ID	Varchar(50)	Not null
COMPAINT	Varchar(200)	Not null
REPLAY	Varchar(200)	Not null

SYSTEM DEVELOPMENT

FRONT END

PYTHON

Python is a widely used general-purpose, high level programming language. It was initially designed by Guido van Rossum in 1991 and developed by Python Software Foundation. It was mainly developed for emphasis on code readability, and its syntax allows programmers to express concepts in fewer lines of code. Python is a programming language that lets you work quickly and integrate systems more efficiently.

There are two major Python versions- Python 2 and Python 3. Both are quite different.

HTML

Hypertext Markup Language (HTML) is the standard markup language for creating web pages and web applications. With Cascading Style Sheets (CSS) and JavaScript it forms a triad of cornerstone technologies for the World Wide Web. Web browsers receive HTML documents from a web server or from local storage and render them into multimedia web pages. HTML describes the structure of a web page semantically and originally included cues for the appearance of the document.

PyCharm

PyCharm is an integrated development environment (IDE) used in computer programming, specifically for the Python language. It is developed by the Czech company JetBrains. It provides code analysis, a graphical debugger, an integrated unit tester, integration with version control systems (VCSes), and supports web development with Django as well as Data Science with Anaconda. PyCharm is cross-platform, with Windows, macOS and Linux versions. The Community Edition is released under the Apache License, and there is also Professional Edition with extra features – released under a proprietary license.

Features

- Coding assistance and analysis, with code completion, syntax and error highlighting, linter integration, and quick fixes

- Project and code navigation: specialized project views, file structure views and quick jumping between files, classes, methods and usages
- Python refactoring: includes rename, extract method, introduce variable, introduce constant, pull up, push down and others
- Support for web frameworks: Django, web2py and Flask [professional edition only]
- Integrated Python debugger
- Integrated unit testing, with line-by-line code coverage
- Google App Engine Python development [professional edition only]
- Version control integration: unified user interface for Mercurial, Git, Subversion, Perforce and CVS with change lists and merge
- Support for scientific tools like matplotlib, numpy and scipy [professional edition only] It competes mainly with a number of other Python-oriented IDEs, including Eclipse's PyDev, and the more broadly focused Komodo IDE.

BACKEND

My SQL

MySQL is an open source relational database and it includes advanced data types. MySQL operates using client/server architecture in which the server runs on the machine containing the database and client connect to the server over the network. MySQL run on all platforms supported by MySQL and provides the most direct means of interacting with the server, so it's the logical client to begin with.

- ❖ You need to have the MySQL software installed.
- ❖ You need a MySQL account so that you can connect to the server.
- ❖ You need a database to work with.

The required software includes the MySQL clients and a MySQL server. The client program must be located on the machine where you will work. The server can be located on our machine although that is not required. As long as you have permission to connect to it the server can be located anywhere. In addition to the MySQL software you will need a MySQL account so that the server will allow you to connect and create us sample database and its table.

Microsoft SQL Server 2008 is a full-featured relational database management system (RDBMS) that offers a variety of administrative tools to ease the burdens of database development, maintenance and administration. In this article, we'll cover six of the more frequently used tool: Enterprise Manager, Query analyzer, SQL Profiler, Service Manager, Data Transformation Services and Books Online. Let's take a brief look at each:

Enterprise Manager is the main administrative console for SQL Server installations. It provides you with a graphical “birds-eye” view of all of the SQL Server installation on your network. You can perform high-level administrative functions that affect one or more servers, schedule common maintenance tasks or create and modify the structure of individual databases.

Query Analyzer offers a quick method for performing queries against any of your SQL Server databases. It's a great way to quickly pull information out of a database in response to a user request, test queries before implementing them in other applications, create/modify stored procedures and execute administrative tasks.

SQL Profiler provides a window into the inner workings of your database. You can monitor many different event types and observe database performance in real time. SQL Profiler allows you to capture and replay system “traces” that log various activities. It's a great tool for optimizing databases with performance issues or troubleshooting particular problems.

Service Manager is used to control the MS SQL Server (the main SQL Server process), MSDTC (Microsoft Distributed Transaction Coordinator) and SQLSeverAgent processes. An icon for this service Manager to start, stop or pause any one of these services.

Data Transformation Services (DTS) provide an extremely flexible method for importing and exporting data between a Microsoft SQL Server installation and a

large variety of other formats. The most commonly used DTS application is the “Import and Export Data” wizard found in the SQL Server program group.

SYSTEM TESTING

SYSTEM TESTING

Testing the process of **executing** website is controlled manner in order to answer the suggestion does the website behave as specified?" Testing is often used in association with the terms verification and validation .Verification is checking or testing of items, including websites, for conformance and consistency with associated specifications.

Unit Testing

Unit testing is a method by which individual unit of source code, set of one or more computer program modules together with associated control data, usage procedures, and operating procedures are tested to determine if they are fit to use. Intuitively, one can view a unit as the smallest testable part of an application. In procedural programming, a unit could be an entire module, but it is more commonly an individual function or procedure.

Module Level Testing

In module level testing error will be found at each individual unit, it encourages the programmer to find and rectify the errors with affecting other modules.

Integration Testing

Integration testing identifies problems that occur when unit is combined. By using a test plan that requires you to test each unit and ensure the viability of each before combining unit. You know that any errors discovered when combining units likely related to the interface between units .This method reduce the number of possibilities to a far simpler level of analysis.

Validation Testing

It ensures that the product has been build according to the requirements and design specifications. Validation ensures that "you built the right product". In this majority of validations done during the data entry in the operation where there is a maximum possibility of entering wrong data. We perform validation testing in "Advanced ATM" application system.

Recovery Testing

Recovery Testing is the activity of testing how well an application is able to recover from crashes, hardware failures and other similar problems. Recovery

testing is the forced failure of the software in a variety of ways to verify that recovery is properly performed.

Output Testing

After performing the validation testing, the next step is output testing of Advanced ATM application system. Since no system would be termed as useful until it produce the required output in the specified format.

Source code Testing

This examines the logic of the system. If we are getting the output that is required by the user, then we can say that the logic is perfect.

SYSTEM IMPLEMENTATION SOFTWARE

SYSTEMIMPLEMENTATION

System implementation is the final stage of software development life cycle. For the successful implementation and cooperation of new systems users must be selected, educated and trained. Unless the users are not trained, the system will become complex it will become feel as a burden for them. A software implementation method is a systematically structured approach to effectively integrate software based service or component into the workflow of an organizational structure or an individual end-user. A software implementation method is a blueprint to get users and/or organizations running with a specific software product. The method is a set of rules and views to cope up with the most common issues that occur when implementing a software product: business alignment from the organizational view and acceptance from human view. It is stated that the implementation of software consumes up to 1/3 of the budget of a software purchase. The complexity of implementing product differs on several issues. Examples are: the number of end users that will use the product, the effects that the implementation has on changes of tasks and responsibilities for the end user, the culture and the integrity of the organization where the software is going to be used and the budget get available for acquiring the software.

The implementation stage of the system being by preparing a plan for implementation of the system. According to this plan, activities are to be carried out, discussions are to be made regarding the equipment to be required, resources and additional facilities required implementing the system. The most critical stage in achieving a successful system is by giving users confidence that the system will work based on their requirements and be effective. This method also offers the greatest securities since the old system can take over if the errors are found or inability to handle certain transactions while using the new system.

The implementation involves the following formalities:

- ❖ Careful planning
- ❖ Investigation of the system and constraints
- ❖ Design the methods to achieve the changes
- ❖ Training the staffs in the changed phase ➤ Evaluation of the changeover method

IMPLEMENTATION

Implementation of the system refers to the final installing of the package in its real environment, to the satisfaction of the indeed users and the operation of the system. It is the process of converting a new or revised system design to operation. It is the key stage in achieving successful new system. The process of putting the developed system in actual use is called system implementation. This includes all those activities that take place to convert from the old system to new system. It must therefore be carefully planned and controlled. Proper guidance should be imparted to the users so that he is comfortable in using the application.

Implementation Plan

The transformation from theoretical designs to working system is done in this stage. Developed package of system is tested with simple data, accurate error identification and then through proposed change from the user etc. a dress rehearsal working of system is done, so as the system is scrutinized, for pointing out errors and modifications required if any keeping in mind the expectations and specifications from the system.

Education And Training

The expectations from the system are made achieved by the people who will be involved to be confident of their role in the new system. The complexity of the system is directly proportional to the amount of training and education given for the user. Education is different from the training, as the user through education can be a part of development of the system. Education has the capability to make training more interesting and important contributions in the system changes.

Training just means to give user specific skills in order to meet their new job requirements. The role of system analyst in training will make it more understandable and effective. Training provides a better overview of new system and its present objectives.

Training Of Application Software

Awareness about the new system is made to the users through training, and with the underlying philosophy of the system (screen design, flow, error types during inputs, validation checks etc.) application use the system, as the users of the system may be of at different levels of hierarchy.

Post Implementation Review

System performance v/s expected requirements are evaluated. The implementation problems if any is taken seriously and taken care of along with admiring the achievements, failures etc. The works done here are used to improve the efficiency and user friendliness of the system.

Security

System security is a branch of technology known as information security as applied to computers and networks. The objective of system security includes protection of information and property from theft, corruption, or natural disaster, while allowing the information and property to remain accessible and productive to its intended users. The term system security, means the collective processes and mechanisms by which sensitive and valuable information and services are protected from publication, tempering or collapse by unauthorized activities or untrustworthy individuals and unplanned events respectively. The technologies of system security are based on logic. As security is not necessarily the primary goal of most computer applications, designing a program with security in mind often imposes restrictions on that program's behavior.

Maintenance

Maintenance is making adaptation of the software for external changes (requirements changes or enhancements) and internal changes (fixing bugs). When changes are made during the maintenance phase all preceding steps of the model must be revisited.

There are three types of maintenance:

1. Corrective (Fixing bugs/errors)
2. Adaptive (Updates due to environment changes)
3. Perfective (Enhancements, requirements changes)

Maintenance is enigma of the system development. The definition of the software maintenance can be given describing four activities that are undertaken after the program is released for use.

The maintenance activity occurs since it is unreasonable to assume that software testing will uncover all in a large system. The second activity that contributes the definition of maintenance occurs since rapid changes are encountered in every aspects of computing. The third activity

involves recommendation for new capabilities, modification to the existing functions and general enhancements when the software is used. The fourth maintenance activity occurs when software is changed to improve future maintainability or reliability.

SCOPE FOR FUTURE ENHANCEMENT

SCOPE FOR FURTHER ENHANCEMENT

Distinguishing feature of our proposal is that data integrity, including tag consistency, can be achieved. To our knowledge, no existing work on secure deduplication can properly address the reliability and tag consistency problem in distributed storage systems.

Our proposed constructions support both file-level and block-level deduplications.

Security analysis demonstrates that the proposed deduplication systems are

Secure in terms of the definitions specified in the proposed security model. In more details, confidentiality, reliability and integrity can be achieved in our proposed system. Two kinds of collusion attacks are considered in our solutions. These are the collusion attack on the data and the collusion attack against servers. In particular, the data remains secure even if the adversary controls a limited number of storage servers.

CONCLUSION

CONCLUSION

We proposed the distributed de duplication systems to improve the reliability of data while achieving the confidentiality of the users outsourced data without an encryption mechanism.

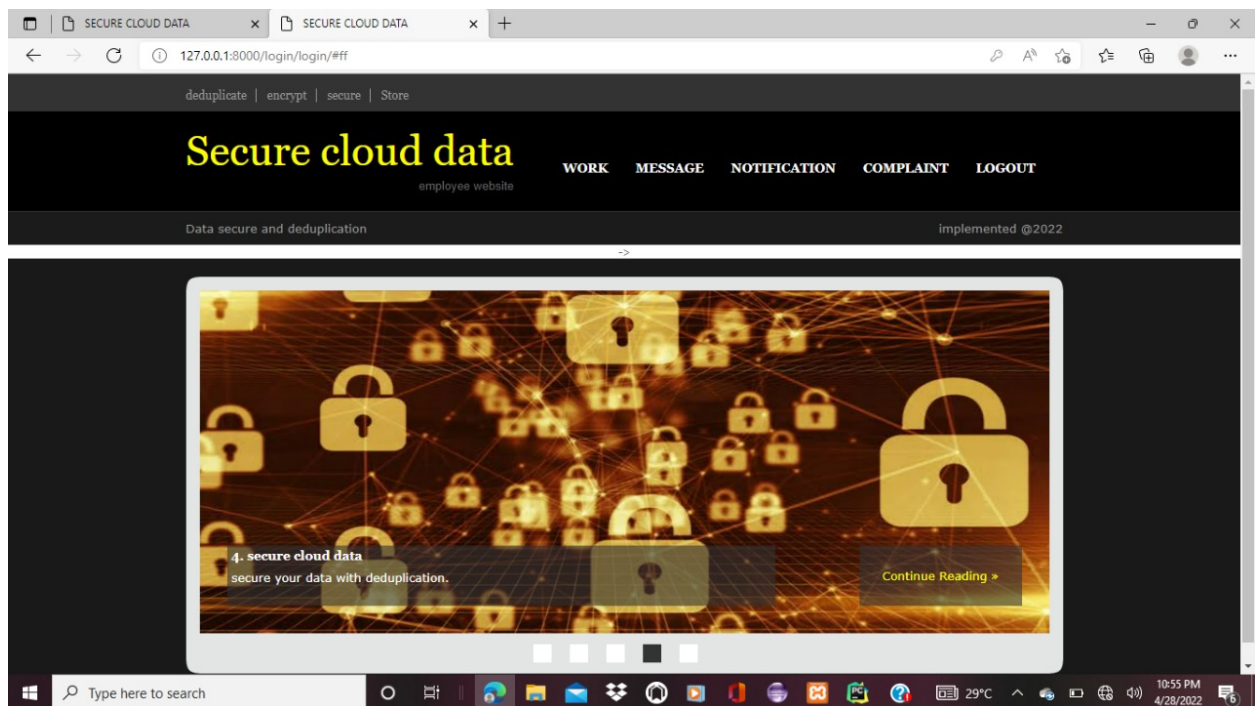
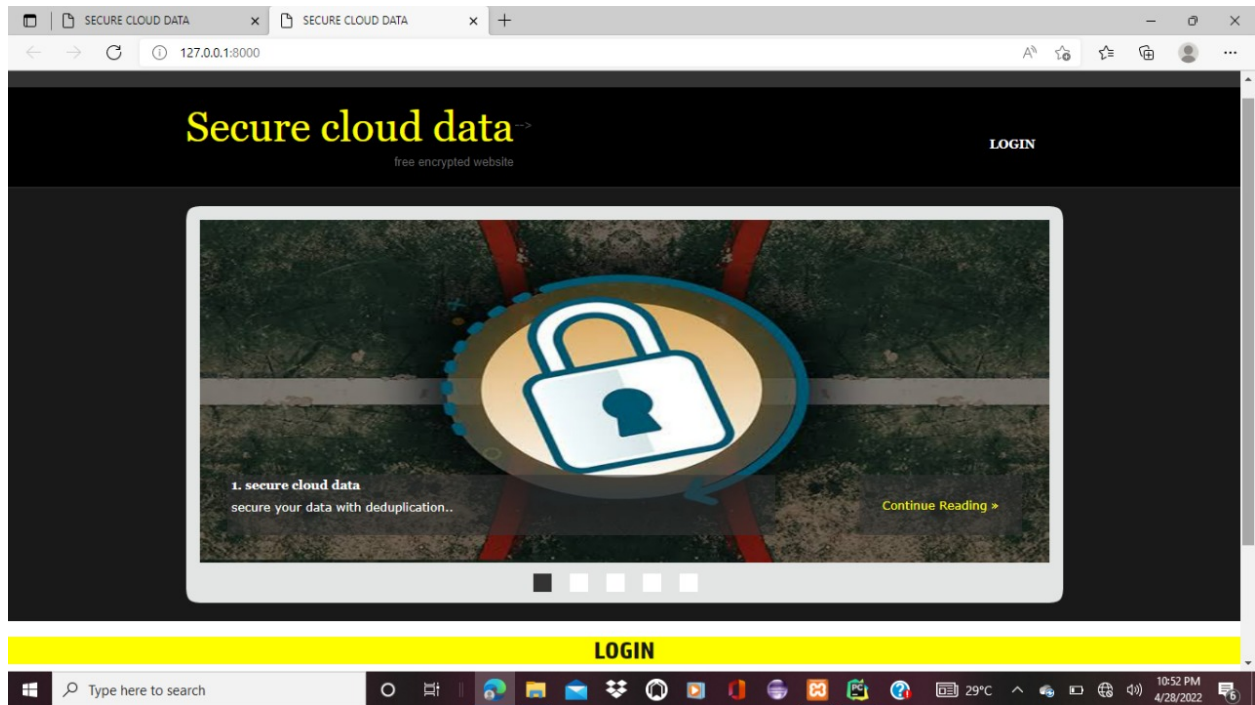
Four constructions were proposed to support file level de duplication. The security of tag consistency and integrity were achieved.

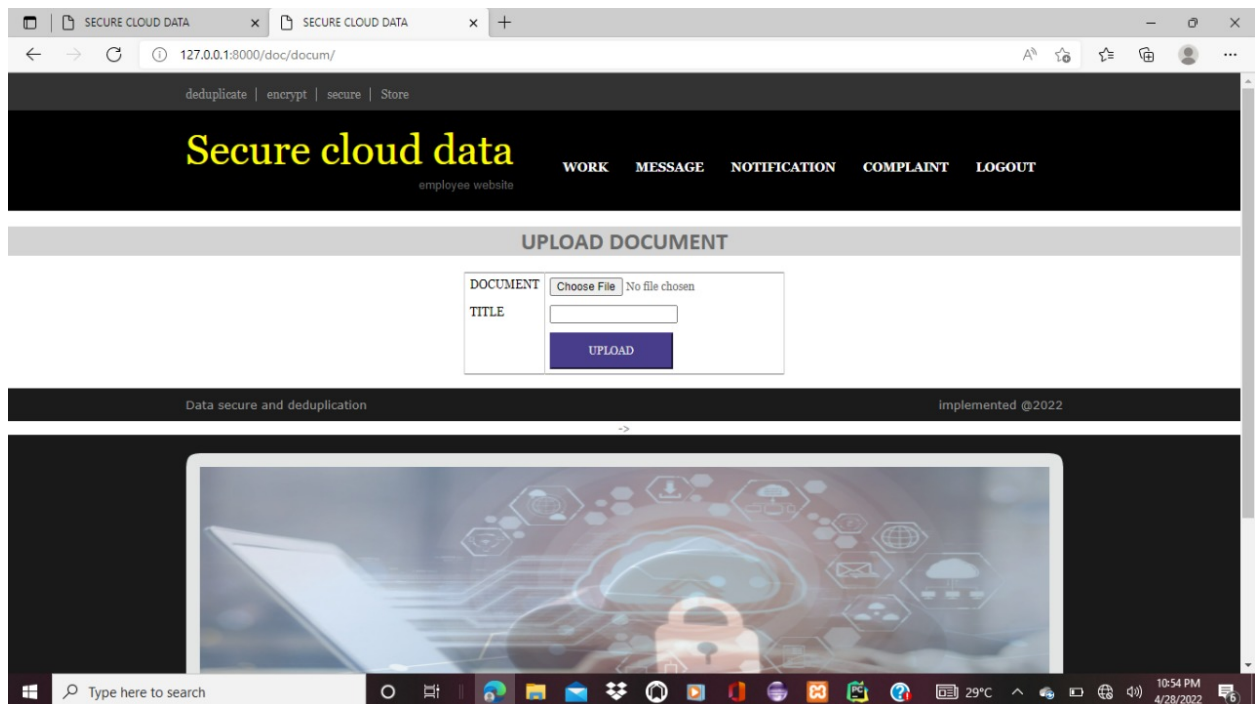
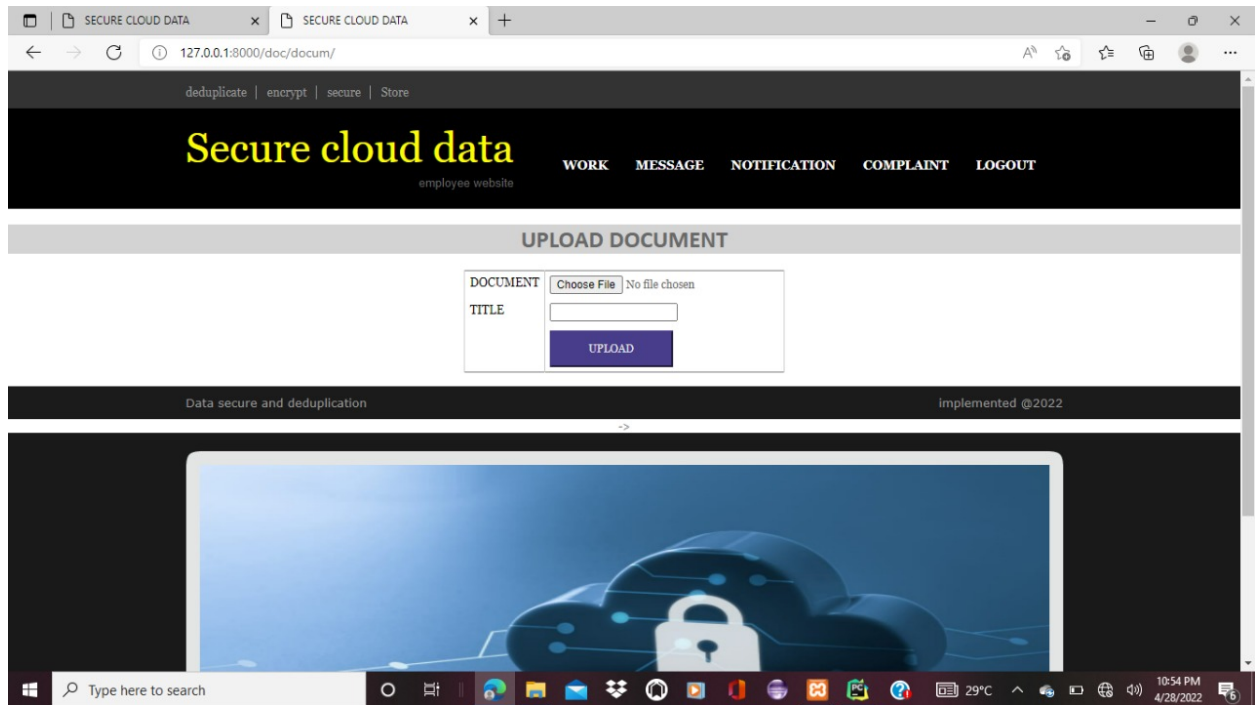
REFERENCE

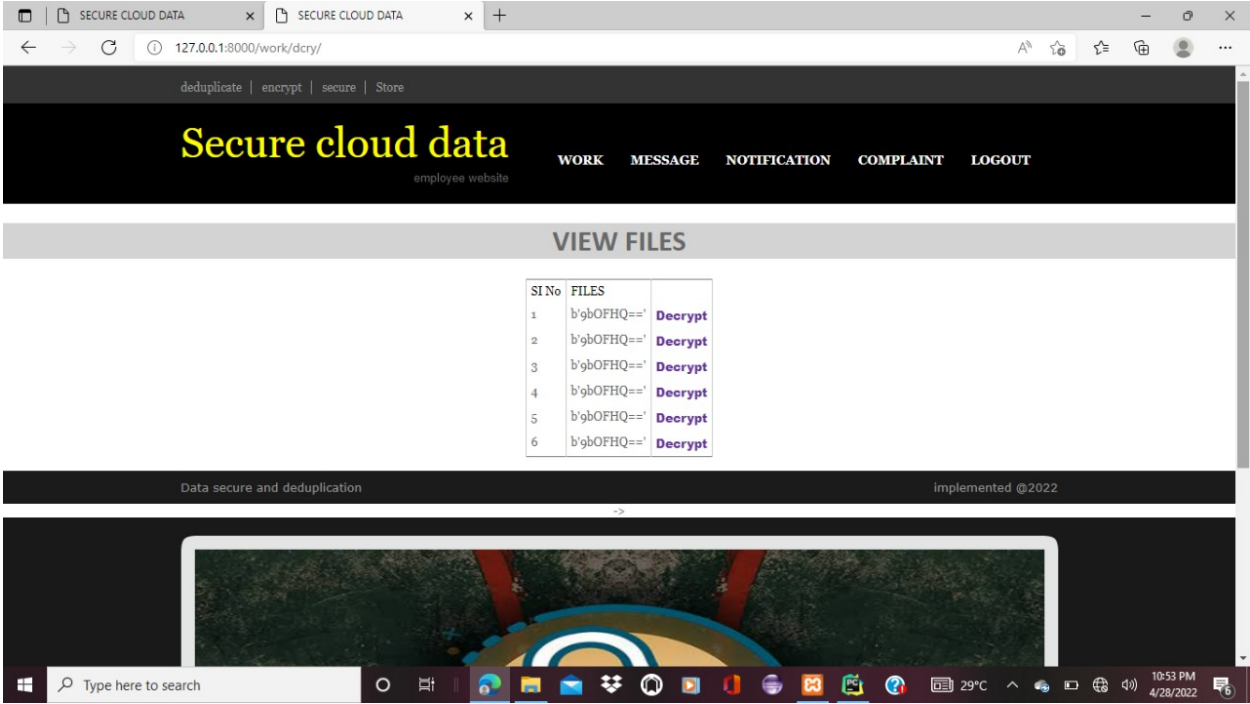
Web Sites

- www.wikipedia.com
- www.learnvisualstudio.net
- www.google.com
- www.codeproject.com
- www.tutorialspoint.com

SCREEN SHOT







PROGRAM CODE

ASSIGN WOK

```
{% extends 'temp/admin.html' %}
{% block base %}

<h1 align="center" style="color:dimgray;font-family:Calibri;background:lightgrey">ASSIGN
WORK</h1>
<form method="post" enctype="multipart/form-data">
{% csrf_token%}
<table align="center" style="border-style: outset; height: auto; width: auto;">

    <tr>

        <td style="color: black">WORK</td>

        <td><input type="file" name="im" required></td>

    </tr>

    <tr>

        <td style="color: black">EMPLOYEE</td>

        <td><SELECT name="emp" required>

            <option value="select">----select----</option>

            {% for obj in obval %}

            <option value="{{ obj.e_id }}">{{ obj.name }}</option>

            {% endfor %}

        </SELECT>

        </td>

    </tr>

    <tr>

        <td><input type="submit" name="submit" value="ASSIGN" style="background:
darkslateblue;color: #E3E3E3;border-color: darkslateblue;height: 40px;width: 135px"></td>

    </tr>

</table>

</form>

{% endblock %}
```

REGISTER:

```
{% extends 'temp/admin.html' %}
```

```
{% block base %}
```

```
<h1 align="center" style="background:lightgrey;color:dimgray;font-family:
Calibri;">REGISTER</h1>
```

```
<form method="post">
```

```
    {% csrf_token %}
```

```
<table align="center" style="border-style: outset; width:auto; border-color: white;" class="s" >
```

```
<tr>
```

```
    <td style="color: black">NAME</td>
```

```
    <td><input type="text" name="name" required></td>
```

```
</tr>
```

```
<tr>
```

```
    <td style="color: black">DOB</td>
```

```
    <td><input type="date" name="dob" required></td>
```

```
</tr>
```

```
<tr>
```

```
    <td style="color: black">CONTACT</td>
```

```
    <td><input type="text" name="contact" required></td>
```

```
</tr>
```

```
<tr>
```

```
    <td style="color: black">EMAIL ID</td>
```

```
    <td><input type="text" name="email" required></td>
```

```
</tr>
```

```
<tr>
```

```
    <td style="color: black">USERNAME</td>
```

```
    <td><input type="text" name="username" required></td>
```

```
</tr>
```

```
<tr>
```

```
    <td style="color: black">PASSWORD</td>
```

```
    <td><input type="text" name="pass" required></td>
```

```

</tr>
<tr>
  <td></td>
</tr>
<tr>
  <td></td>
</tr>
<tr>
  <td></td>
</tr>
<tr>
  <td></td>
</tr>
<tr>
  <td colspan="2" align="center"><input type="submit" name="reg"
value="REGISTER"style="background: darkslateblue;color: #E3E3E3;border-color:
darkslateblue;height: 40px;width:80% "></td>
</tr>
<tr>
  <td></td>
</tr>
<tr>
  <td></td>
</tr>
<tr>
  <td></td>
</tr>
<tr>
  <td></td>
</tr>
</table>
</form>
<style>
.s{
  padding-top: 10%;
  padding-bottom: 10%;
  size: A3;

```

```
}  
</style>  
{% endblock %}
```

LOGIN

```
{% extends 'temp/index.html' %}
{% block base %}
    <h1 align="center" style="color: #191919;font-family: 'HP Simplified';background:yellow">LOGIN</h1>
    <form method="post">
        {% csrf_token %}
    <table align="center" style="border-style: outset; height: auto; width: auto;background-color:gainsborowhite">
        <tr>
            <td style="color: black">USERNAME</td>
            <td><input type="text" name="user" required=""></td>
        </tr>
        <tr>
            <td style="color: black">PASSWORD</td>
            <td><input type="password" name="pass" required=""></td>
        </tr>
        <tr>
            <td><input type="submit" name="log" value="LOGIN" style="background-color:darkslateblue;border-color:darkslateblue;color: #E3E3E3;height: 30px;width: 70px"></td>
        </tr>
    </table>
    {% if msg %}
        <script>
            alert('{{ msg }}')
        </script>
    {% endif %}
    </form>
{% endblock %}
```

UPLOAD DOCUMENT

```
{% block base %}
<h1 align="center" style="color:dimgray;font-family:Calibri;background:lightgrey">UPLOAD DOCUMENT</h1>
<form method="post" enctype="multipart/form-data">
  {% csrf_token %}
  <table align="center" style="border-style: outset; height: auto; width: auto;">
    <tr>
      <td style="color: black">DOCUMENT</td>
      <td><input type="file" name="doc" required></td>
    </tr>
    <tr>
      <td style="color: black">TITLE</td>
      <td><input type="text" name="title" required></td>
    </tr>
    <tr>
      <td></td>
      <td><input type="submit" name="submit" value="UPLOAD" style="background: darkslateblue;color:
#E3E3E3;border-color: darkslateblue;height: 40px;width: 135px"></td>
    </tr>
  </table>
</form>
{% endblock %}
```

