**Synopsis on**

File Management System

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**CHAPTER 1**

**INTRODUCTION**

**1.1 MAJOR PROJECT : FILE MANAGER**

Organization is the key solution to reduce efforts and time to every hectic schedule. File management Systemis an application that provides a [user interface](http://en.wikipedia.org/wiki/User_interface) to work with [file systems](http://en.wikipedia.org/wiki/File_system), storing and organizing structured and unstructured documents. Users can login to manage and access their file system from anywhere using their secured credentials. The file manager displays the file/folder hierarchy, and it allows users to create new folders, upload, delete, download any type of file with an intuitive user interface. They can move files and folders from one directory to another via cut/copy/paste features and view their details, rename them as well as search and sort the files according to their convenience.

File Manager also allows users to store their files in a private cloud which thus, increases users capacity to upload large size files without any size constraint.

**1.2 MINOR PROJECT : MUSIC APPLICATION**

Music Application is built on microservices architecture to track all the details about the Music name, Artist name, Genre and Album type. It allows users to login and access their playlist which they can create by uploading the songs. They can also download and delete the song file as well as modify their details. It reduces the manual work of managing songs.

File management System and Music Application are based on microservices using SpringBoot Framework integrated with various servers and databases like Keycloak, Eureka, Gateway, Minio, MongoDb.

* Keycloak : It is an identity and access management system which takes record of users and their roles to authorize and authenticate their identities.
* Gateway : It is an abstraction layer which does not allow the exposure of microservices and gives a routing facility for those microservices.
* Eureka : It is a registry service where microservices are registered. When the api is called gateway contacts eureka to check whether the port is available or not.
* Minio : It is a private cloud. It stores unstructured data such as photos, videos, log files, backups, and container images with the maximum supported object size of 5TB.
* MongoDb : It is an open-source document database and leading NoSQL database.

**CHAPTER 2**

**2.1 ORGANIZATION**

CostaCloud is an organization that works with their partners and customers to provide the best in IT and Business consulting focusing on helping Clients move to the Cloud, Virtualization, Business Continuity, Security, Business Process Management and Automation. Along with this they help customers manage their data and processes, provide solutions to GoGreen and to help optimize Business processes.

They believe in the simple philosophy that “When our customer gains we gain”. They believe in providing a clear ROI for all their products and services and help formulate an ROI tracker for customers.

CostaCloud is helping customers Organize, Digitize, Maintain, Collaborate, Share, Publish and Archive their data. They also provide Business Process Optimization services, to help gain efficiency over the current business processes. CostaCloud offers solutions specifically designed to solve problems for the Banking and Insurance (BFSI), Government (Whitehall Filing System), Oil & Gas Industry, Engineering, Power Generation & Automation, Real Estate, Pharmaceuticals and the Automobile Industry.

CostaCloud provides solutions built on top world class products such as OpenText BPM and IBM BPM. Their Solutions include eOffice for Government Files and DAK management, Account Opening, Trade Finance, Debt Process, Loan Processing for Banks, Hospital Management (HIMS) amongst others. Also providing agility to Data Centers and Businesses moving to the Public, Private or Hybrid cloud for their IaaS, PaaS and SaaS needs.

CostaCloud uses Artificial Intelligence to help discover and improve their customer processes. Helping them with insights to discover or rediscover parts of the business and gain better control on the outcomes of their business.

Headquarters New Delhi, Delhi

Founded 1986

Specialties Cloud Computing, Big Data, Enterprise Content

Management, Analytics, Virtualization, VMWare,

Citrix, Microsoft, and Virtual Desktop Infrastructure(VDI)

**2.2 EXISTING SYSTEM**

The existing file system organizes the files and helps in the retrieval of files when they are required. File systems consist of different files which are grouped into directories. The directories further contain other folders and files.

* File system is basically a way of arranging the files in a storage medium like a hard disk and thus it doesn’t provide backup and recovery of data if it is lost.
* Users cannot use this system from different locations which results in sharing of duplicate data. Thus, Redundant data can be present in a file system making it less consistent.
* File System is a single user database system as only one user can access the data at a time.
* The File System has a lack of security and limited data sharing. Data sharing and security are closely related. Sharing data among multiple geographically dispersed users introduces a lot of security risks.
* There is no data independence thus, all data access programs are subject to change when any of the file’s data storage characteristics change.

**2.3 PROPOSED SYSTEM**

Proposed file management system is a software that manages the collection of related data. It is used for storing data and retrieving the data effectively when it is needed. It also provides proper security measures for protecting the data from unauthorized access. The file manager displays the file/folder hierarchy.

* The Proposed File Manager uses Keycloak which is an identity and access management system for the authorization and authentication of users. Thus, it has more security mechanisms as compared to traditional file systems.
* It allows multiple users to access, modify and share their data at the same time.
* Users can access their files from different locations, Due to the centralized nature of this system, there is no redundant data and the system is more consistent, this makes sharing more easy.
* This File System uses MongoDB for storing the structured data and Minio to store the unstructured data which have the storage capacity of 5TB, this allows users to store large files without any size constraint.
* The file system aims to allow one employee to share the data by giving the access of a specific file to another employee of the same organization.

**CHAPTER 3**

**REQUIREMENT ANALYSIS**

**3.1 REQUIREMENT SPECIFICATIONS**

**3.1.1 PURPOSE**

The purpose of File Management System is to store important files and documents more securely by authenticated and authorized users. The goal is to reduce the redundancy and manage files more efficiently. The files are stored in a private cloud, thus can be accessed by the user from any remote location. It also aims to allow sharing of data between employees by giving access to files through link.

**3.1.2 PROJECT SCOPE**

The project scope of file manager are the following key functionalities of this system:

* Create new folder
* Upload multiple files at same time
* Download files
* View files and subfolders in a selected folder.
* Delete specific files and folders
* View details of selected file/folder like name, size, location, type and date of creation.
* Copy and Move files and folders to different locations

**3.2 HARDWARE AND SOFTWARE REQUIREMENTS**

**3.2.1 HARDWARE INTERFACES**

|  | **SERVER SIDE** | **CLIENT SIDE** |
| --- | --- | --- |
| **RAM** | 512 MB | 128 MB |
| **HDD** | 5 GB or more (Free space excluding data size) | 1 GB or more (Free space excluding data size) |
| **PROCESSOR** | 1-2 GHz (P4) or onwards | 450 GHz (P2) |

**3.2.2 SOFTWARE INTERFACES**

* **Client Side**

| **Operating System** | Any OS |
| --- | --- |
| **Browser** | Any browser compatible with IE 5.0 or onwards |

* **Developer Side**

| **Operating System** | Windows 7 or onwards |
| --- | --- |
| **Browser** | Any browser compatible with IE 5.0 or onwards |
| **FrontEnd** | HTML, CSS, JavaScript, ReactJS |
| **BackEnd** | Java, SpringBoot |
| **DataBase** | MongoDB, Minio |
| **Design Tools** | VS Code, Eclipse, KeyCloak |

**CHAPTER 4**

**FEASIBILITY STUDY**

Feasibility study is a test of a system proposed regarding its workability, impact on the organization, ability to meet the needs and effective use of resources. Thus when a new project is proposed, it normally goes through a feasibility study before it’s approved for development.

The key considerations in the feasibility analysis are:

* **1. Economic Feasibility**

It looks at the financial aspects of the project. It determines whether the management has enough resources and budget to invest in the proposed system and estimated time for the recovery of cost incurred. Economic feasibility is determined by the means of cost benefits analysis.

The proposed system is economically feasible since the savings and benefits of the system are more when compared to the cost. The proposed system reduces human efforts and also reduces the drawbacks of the existing system .The proposed system is more accurate, speedy and dependable. Thus the cost by benefit ratio is very small.

* **2. Technical Feasibility**

It is the assessment based on an outline design of system requirements, to determine whether the organization has the technical expertise to handle completion of the project.

The proposed system uses Java and Spring boot framework for development. REST template is utilized for communication between microservices, KeyCloak for authentication and authorization, Elasticsearch for extensive search and MongoDB and MinIO for data storage.The above tools are readily available (open Source) and easy to work with.

* **3.Behavioral Feasibility**

Behavioral feasibility is a scale of how the proposed system solves the problems, to what extent it takes the advantage of the opportunities identified during scope definition and how much it satisfies the requirements identified in the requirements analysis phase of system development.

The proposed project would be beneficial to all Organizations that it satisfies the objectives when developed and installed. All the behavioral aspects are considered carefully. Thus the project is behaviorally feasible and it can also be implemented easily.

**CHAPTER 5**

**WORK PLAN**

The File Manager project is built using AGILE METHODOLOGY.

The Agile methodology is a way to manage a project by breaking it up into several phases. It is one of the simplest and effective processes to turn a vision for a business need into software solutions. It encourages flexible responses to change and promotes continuous iteration of development and testing throughout the software development life cycle of the project.

Agile software development emphasizes four core values.

1. Individual and team interactions over processes and tools

2. Working software over comprehensive documentation

3. Customer collaboration over contract negotiation.

4. Responding to change over following a plan.

File Management System is a microservice application. Microservices are an approach to application development in which a large application is built as a suite of modular services (i.e. loosely coupled and independently deployable modules/components).

**CHAPTER 6**

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