

A Project Report
On
DATA STORAGE IN CLOUD AND SECURITY

Submitted to
JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR, ANANTHAPURAMU
In Partial Fulfillment of the Requirements for the Award of the Degree of

BACHELOR OF TECHNOLOGY

In
COMPUTER SCIENCE & ENGINEERING

Submitted By

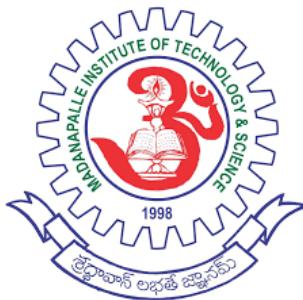
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**MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE
(UGC – AUTONOMOUS)**

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2020-2021



DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

BONAFIDE CERTIFICATE

This is to certify that the project work entitled "**DATA STORAGE IN CLOUD AND SECURITY**" is a bonafide work carried out by

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ACKNOWLEDGEMENT

We sincerely thank the **MANAGEMENT** of **Madanapalle Institute of Technology & Science** for providing excellent infrastructure and lab facilities that helped me to complete this project.

We sincerely thank **Dr. C. Yuvaraj, M.E., Ph.D., Principal** for guiding and providing facilities for the successful completion of our project at **Madanapalle Institute of Technology & Science**, Madanapalle.

We express our deep sense of gratitude to **Dr. R. Kalpana, M. Tech., Ph.D., Professor and Head of the Department of CSE** for his continuous support in making necessary arrangements for the successful completion of the Project.

We express our sincere thanks to the **Internship Coordinator, Dr. R. Anandkumar, M. Tech., Ph.D.**, for his tremendous support for the successful completion of the Project.

We express my deep sense gratitude to **Dr. V. Arun, Ph.D , Project Coordinator** for their guidance and encouragement that helped us to complete this project.

We express our deep gratitude to my guide **Dr. V. Arun, PhD, Associate Professor, Department of CSE** for his guidance and encouragement that helped us to complete this project.

We also wish to place on record my gratefulness to other **Faculty of CSE Department** and also to our friends and our parents for their help and cooperation during our project work.



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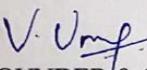
V.Umesh (*Director*)

Internship Certificate

This is to certify that **Mr. ANNAPUREDDY VENKATA SAI KUMAR REDDY (17691A05G6)**, student of B.Tech (CSE), Madanapalle Institute of Technology and Science, Madanapalle has successfully completed the internship in Machine Learning offered by Tharam-Thiran Green Energy Flow LLP during the period 1st March 2021 to 30th July 2021.

During the tenure of the internship, ANNAPUREDDY VENKATA SAI KUMAR REDDY performance was excellent. He demonstrated significant problem-solving skills, worked on challenging tasks and very good team player. We would be very open to have ANNAPUREDDY VENKATA SAI KUMAR REDDY as a member of the Tharam-Thiran Green Energy Flow LLP ML team once again, should such an opportunity arise in the future.

We wish him good luck for his future endeavors.


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During the tenure of the internship, BEPARI ZAID ALI KHAN performance was excellent. He demonstrated significant problem-solving skills, worked on challenging tasks and very good team player. We would be very open to have BEPARI ZAID ALI KHAN as a member of the Tharam-Thiran Green Energy Flow LLP ML team once again, should such an opportunity arise in the future.

We wish him good luck for his future endeavors.

A handwritten signature in black ink, appearing to read "V. Umesh".

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During the tenure of the internship, NOOKA CHAITANYA KUMAR REDDY performance was excellent. He demonstrated significant problem-solving skills, worked on challenging tasks and very good team player. We would be very open to have NOOKA CHAITANYA KUMAR REDDY as a member of the Tharam-Thiran Green Energy Flow LLP ML team once again, should such an opportunity arise in the future.

We wish him good luck for his future endeavors.

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Plagiarism Verification Certificate

This is to certify that the B. Tech Project report titled, “**DATA STORAGE IN CLOUD AND SECURITY**” submitted by **ANNAPURE REDDY VENKATA SAI KUMAR REDDY (REGD. NO: 17691A05G6), B. ZAID ALI KHAN (REGD. NO: 17691A05I1)** and **NOOKA CHAITANYA KUMAR REDDY (REGD. NO: 18695A0502)** has been evaluated using **Anti-Plagiarism Software, URKUND** and based on the analysis report generated by the software, the report’s similarity index is found to be **24%**.

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Document Information

Analyzed document	18695A0502-V2.docx (D110759662)
Submitted	7/26/2021 10:11:00 AM
Submitted by	
Submitter email	dean-rrc@mits.ac.in
Similarity	24%
Analysis address	dean-rrc.mits@analysis.urkund.com

Dean RRC

DECLARATION

We hereby declare that the results embodied in this project "**DATA STORAGE IN CLOUD AND SECURITY**" by us under the guidance of **Dr. V. Arun, Ph.D., Associate Professor, Department of CSE** in partial fulfillment of the award of **Bachelor of Technology** in **Computer Science & Engineering** from **Jawaharlal Nehru Technological University Anantapur, Ananthapuramu** and we have not submitted the same to any other University/institute for award of any other degree.

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I certify that above statement made by the students is correct to the best of my knowledge.

Date :

Guide

INDEX

S.NO	TOPIC	PAGE NO
1.	INTRODUCTION	1
	1.1 Motivation	2
	1.2 Problem Definition	2
	1.3 Objective of the Project	2
	1.4 Limitations of the project	2
2.	LITERATURE SURVEY	4
	2.1 Introduction	5
	2.2 Existing System	6
	2.3 Drawbacks of existing System	7
	2.4 proposed system	7
	2.5 Advantages of proposed System	7
3.	ANALYSIS	8
	3.1 Introduction	9
	3.2 Languages used	11
	3.3 Hardware requirements	12
	3.4 Software Methodology	12
4.	DESIGN	17
	4.1 Introduction	18
	4.2 UML Diagrams	18
5.	IMPLEMENTATION AND RESULTS	22
	5.1 Method of Implementation	23
	5.2 Output Screens and Result Analysis	42
6.	CONCLUSION	50
	6.1 conclusion	51
	REFERENCES	52

List of Figures

S.NO	Figure	Name of the figure	Page Number
1	3.1	Cloud services	10
2	4.1	Class diagram	19
3	4.2	Use case diagram	20
4	4.3	Sequence diagram	21
5	5.1	Login page	42
6	5.2	OTP page	42
7	5.3	OTP to mail	43
8	5.4	Welcome page	43
9	5.5	Upload page	44
10	5.6	Welcome page	44
11	5.7	Dashboard page	45
12	5.8	User data	45
13	5.9	Login database	46
14	5.10	Aws S3 bucket	46
15	5.11	Data storing bucket	47
16	5.12	Dynamo DB	47
17	5.13	Dynamo DB	48
18	5.14	Lambda function	48
19	5.15	Lambda function	49

ABSTRACT

It is a secure web based application which is helpful for the storage of data and viewing it in a user friendly manner. This data will then transfer from local storages to cloud based storage where the data will be much more secure and reliable. After collecting sufficient amount of data for training purpose, this data will then be used to train the neural network model. After training the model with bulk amount of data it will be in a position to accurately identify the required parameters. Our aim is to decrease the wastage of the raw products that are used in industries. Every coconut goes through 3 stages pre matured, matured, post matured. Based on the stage coconut water and coconut protein will change. If we want more water coconut should be broken in pre matured stage otherwise water will turn in to coconut protein in next stages. After classifying it can be used to its individual purpose. Our motto is to use the coconut as no waste product by converting coconut shell in to coco peat. It is ecofriendly.

CHAPTER 1

INTRODUCTION

1.1 MOTIVATION

The motivation of our project is to collect enough data so that it will be helpful to make proper fruitful decisions and also storing it in a secure environment so this won't be used in an incorrect way [5]. Existing system is not well trained because no proper data is there on coconut. Maturity. The fruit of the coconut palm is referred to as coconut (*Cocos nucifera*). Its water, milk, oil, and delicious meat are all employed in its production. Coconuts have been farmed in tropical countries for over 4,500 years, but their flavour, culinary applications, and potential health advantages have recently expanded their popularity.

1.2 PROBLEM DEFINITION

The problem faced at present is there is not much data present for the industries or development institutes to work on the increase of productivity of the crop, fruits etc. As we all know that data is the backbone of any successful industry [1]. So for collecting proper useful data and storing it in a secure environment is the main problem. Finding the right way to get the thickness and the water content in the coconut is a major problem. The cloud service provider and the cloud user usually share responsibility for data protection. To avoid the custodial risk of IaaS infrastructure employees accessing sensitive data, data encryption without the need to change apps is a crucial necessity in this context. Amazon provides a vast set of services like amazon S3, amazon DB, amazon SNS etc to store and perform operations on data by using virtual environment.

1.3 OBJECTIVE OF THE PROJECT

1. To improve the availability of Information.
2. To securely store the data [8][9].
3. To build a user-friendly interface for uploading or viewing data.
4. To develop smart model for the predictions.

1.4 LIMITATIONS OF THE PROJECT

- Presently the limitations would be the financials because storing the bulk amount of data and computing it in cloud will cause charges, these charges would be difficult to maintain by a developing project [4].

- Data is one of the main limitations because existing systems don't have proper data to train the neural network model.
- Finding the right technique to get the proper accuracy is a big task after getting the data.

CHAPTER 2

LITERATURE SURVEY

2.1 INTRODUCTION

Coconut water is a pleasant beverage that is also healthy and nutritious. The white meat is a calorie-dense food that is often utilized in South Indian cuisine. Coconut honey may be made by extracting high-quality oil, protein, and carbohydrates from grated wet coconut kernels. The oxidative rancidity of the oil causes undesirable flavor alterations in desiccated coconut.

Coconuts are the world's most widely produced and consumed nut. The coconut plant supports the livelihoods of around 10 million people in India and several million more in other tropical countries. With an area of around 1.12 million hectares, India is the world's third largest coconut producer, accounting for 18% of global output. India produces around 6000 million nuts each year. 50 percent husk, 15 percent shell, 25 percent flesh, and 10% water make up a full coconut. 34 percent cellulose, 36 percent lignin, 29 percent pentosanes, and 1% ash are found in coconut shells.

Coconuts are often picked by assessing their maturity according on changes in color, shape, timing, shaking sound, and other growth characteristics as they mature. Currently, image-processing methods have significant problems in identifying the development phases of coconuts. As a result, an enhanced quicker region-based convolutional neural network model for detecting two critical coconut maturity phases in complicated backdrops is presented. Because of the intricacy of the environment and the similarity of fruits and their backdrops, detecting the development phases of coconuts for harvesting without human intervention is difficult. Coconut farms provided images of ripe coconut bunches and coconuts. Rotation and color manipulation methods were used to enhance these pictures. During model training, these enhanced pictures were combined with original photos. The ResNet-50 network was utilized to improve the detection score of nuts with two major maturation phases using the Faster R-CNN algorithm.

After training, the detection performance was put to the test with a dataset that contained both real-time and Google pictures. The detection performance of the upgraded Faster R-CNN model outperformed that of other object detectors such as the single shot detector (SSD), you only look once (YOLO-V3), and Region-based Fully Convolutional Networks (R-FCN), according to the test findings. The encouraging findings of this study inspired the development of an application tool for assessing coconut maturity from real-time farm pictures.

2.2 EXISTING SYSTEM

In this project, the Single Shot Multibox Detector is used to extract the coconut area, identify the coconut, and provide details to the user so that they may take additional action, such as using a chopper or measuring distances. Connect the climbing robot's camera to capture the image from various angles. After capturing the appropriate input image, it will evaluate it using a trained dataset to determine the coconut's kind.

2.2.1 SMALL VISUAL GEOMETRY GROUP

The dataset is trained using the Small Visual Geometry Group, which extracts the coconut area in the picture and repeats the process multiple times. The first layer in VGG is the convolution layer, which extracts the greatest information from an input picture. It filters the image's undesirable noise, erodes the data, annotates the important data, and connects all squares in completely linked layers. SSD is made for real-time picture object identification.

2.2.2 MOBILE NET

Mobile Net SSD is an easy way to categorize pictures. Convolution layer in Mobile Net is divided into two categories: depth wise and point wise. Depth wise convolution has erased undesirable sections and delivers extracted data to point wise convolution layer, which obtains the value and extracts the features. The Mobile Net design likewise employs conventional convolution; however, once the learning process has begun, the first layer and all subsequent layers use depth-wise separable convolution. These two convolution layers integrate the datasets that have been taught to produce superior outcomes.

1. Depth wise convolution
2. Point wise convolution

Depth wise The contrast and sharpness of a picture are defined by the separable convolution block, which is an enhancement method. This method involves training the data and generating a (.PB) file. The protobuff file specifies the network's size, and Mobile Net excels at region-based segmentation, which uses annotation tools to distinguish the item from the backdrop.

2.3 DRAWBACKS OF EXISTING SYSTEM

The following issues are faced

1. Information is not clear and also very less.
2. No proper websites for easily maintaining and uploading data.
3. Though little data is present it is not even securely stored.

2.4 PROPOSED SYSTEM

Our web application mainly focuses on the data storage and its security Aspects [10]. It is a well-designed application which is useful for uploading and viewing the data in an organized manner. This system is designed for the employees and admins of the firm who can perform certain activities in the web application.

2.5 ADVANTAGES OF PROPOSED SYSTEM

- 2.2.1 Data is secured in a safe environment which uses many security functionalities like encryption, access control etc [2][3].
- 2.2.2 Data is presented in an organized manner so that it will be helpful for future analytics.
- 2.2.3 Easy to use and user friendly [6], everything is just about a click of button so that the employee can do the all task in an automated manner.

CHAPTER 3

ANALYSIS

3.1 INTRODUCTION

Every coconut goes through 3 stages pre matured, matured, post matured. Based on the stage coconut water and coconut protein will change. If we want more water coconut should be broken in pre matured stage otherwise water will turn in to coconut protein in next stages. After classifying it can be used to its individual purpose. Our motto is to use the coconut as no waste product by converting coconut shell in to coco peat. It is ecofriendly.

Why AWS

AWS is the oldest of all the current cloud providers and also the biggest of the cloud providers. It has almost 200+ services that are just a click of button far. With this all provided services in AWS it is easy to the developer to develop or build an application which would have taken much time and lot of server maintenance by the developer himself in previous non cloud computing days. With this the developer need not to be taken care of all the hardware things and the connectivity among themselves to be ready for developing the application. All these activities will be taken care by the service provider in our case the AWS by Amazon.

This will directly impact on the developer in positive way which means the developer will know only focus on the development side of the application rather than hardware maintenance side. It also impacts the company due to the fact that it needs less human power and will be keep on going on the application development way. It is also very user-friendly interface that is been provided by the AWS. This interface will allow the end user or developer to easily access the services provided by the respective provider. It also impacts the company due to the fact that it needs less human power and will be keep on going on the application development way. It is also very user-friendly interface that is been provided by the AWS. This interface will allow the end user or developer to easily access the services provided by the respective provider.it provides best environment.

AWS is extremely popular because of the flexibility, scalability, and the price tag it provides. The services that can be reused multiple number of times give the user the flexibility of reusability. The scalability that is offered by AWS is immensely acceptable and is very agile.

If a startup has the idea and does not have much funding's or financial support, then by accepting the aws model they can build an application in a cost-effective manner. The firm will be able to use the required number of hardware rather than buying entire which can further be not used if the application is not much popular.so by withstanding all the requirements the application will be in a position so that it can with stand the huge or less traffic that is been directed towards the application. This is the main reason that we have a greater number of startups compared to old previous on premise model where the cost of building a product will be much compared to the current easy by which the same model will be built in no time and less hard work. The firm will be able to use the required number of hardware rather than buying entire which can further be not used if the application is not much popular.so by withstanding all the requirements the application will be in a position so that it can with stand the huge or less traffic that is been directed towards the application. This is the main reason that we have a greater number of startups compared to old previous on premise model where the cost of building a product will be much compared to the current easy by which the same model will be built in no time and less hard work.

Popular AWS Services

AWS provides services in the computing field, storage field, networking field, data base field, managing and maintaining field and also in the modern technologies like AI, Block Chain, VR, Gaming etc.

Few services are EC2 (Elastic cloud compute), S3(simple Storage Service), Data base service called Amazon Dynamo DB. EC2 is a a service that is used for computing purpose it handles all the computational task that are required for an application to be executed. In the service the user will select the type of instance he wants, selects the type of the hardware and also the operating systems he wants to patch with the hardware selected. As the capacity of the hardware increases the cost will also increase the smaller the capacity less will be the price. The instance will cost the user until it is in running state, it will stop the bill if it Is terminated by the user.by this way one will be able to pay as much as you use. It goes same to other service too. Once the application is developed it will be deployed in the instances and then it will start running and be accessible to the internet. Firstly, if the traffic is less than the hardware will also be decreased by

the AWS automatically and when the traffic increases the hardware capacity also is increased by AWS itself.

Another popular service is the AWS S3 also called the storage service. As the name talks about the service it is used for. It is an exceptionally reliable and secure service to store the data in the cloud and can be easily accessible via the internet. The user can store infinite amount data in the S3 service and it is very much reliable compared to the old model. Data is stored at multiple location so that it can be recovered from disaster management easily. This is the point where S3 gets the trust of the customer. The storage model provides different type of models to be used to store data. The models will change according the necessity of the user. If the data stored requires less accessibility, then it can be stored in less price data model, if the data is frequently accessed then it must be stored in a bit pricelessly model compared to the previous model. The instance will cost the user until it is in running state, it will stop the bill if it Is terminated by the user. by this way one will be able to pay as much as you use. It goes same to other service too. Once the application is developed it will be deployed in the instances and then it will start running and be accessible to the internet. Firstly, if the traffic is less than the hardware will also be decreased by the AWS automatically.

The user can store infinite amount data in the S3 service and it is very much reliable compared to the old model. Data is stored at multiple location so that it can be recovered from disaster management easily. This is the point where S3 gets the trust of the customer. The storage model provides different type of models to be used to store data. The models will change according the necessity of the user. If the data stored requires less accessibility, then it can be stored in less price data model, if the data is frequently accessed then it must be stored in a bit pricelessly model compared to the previous model.

All this features that are provided by Amazon web services make it the most successful cloud provider in the marketplace.

3.2 LANGUAGES USED

HTML	JavaScript
CSS	PHP
Python	

3.3 HARDWARE REQUIREMENTS

Processor: Intel i7

RAM: 4GB

Hard Disk: 500 GB

3.4 SOFTWARE METHODOLOGY

We are hosting our website in amazon cloud so in order to host it, we need to build some environment in the cloud to run our application better. We already know there are 3 types of cloud services

1. Infrastructure as a service
2. Platform as a service
3. Software as a service means each service is tightly couples means dependent on each other.

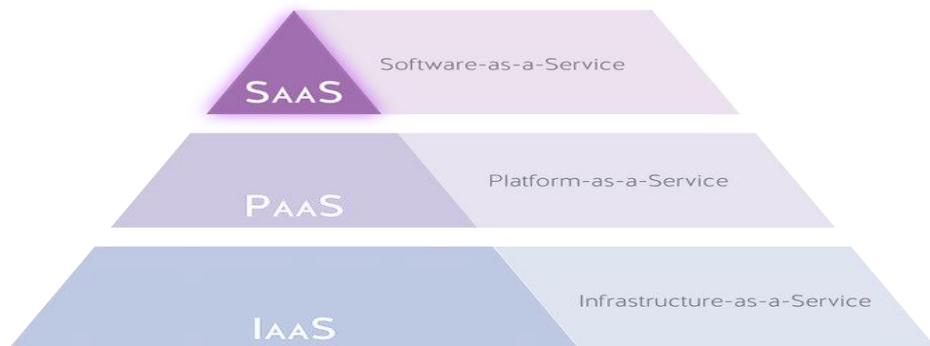


Fig 3.1 cloud services

I will demonstrate the services with examples used in my project. The first one is infrastructure as a service it means using of computing resources I mean the type of network, internet gateway, system specifications, cpus, ram, storage, disks, including AMIS (AMAZON VIRTUAL MACHINES) you can choose the type of operating systems also, including customized operating systems. For this project we are using private cloud network with 1gb ram, 1 cpu of

Ubuntu 20.04 operating system with 8gb secondary storage of ssd type using ipv4 auto assigning network available ip address. Also the important thing is generating of public key it will be assigned to machine in order to access this machine remotely you should have secure shell because of Linux type in case of windows we need to have remote desktop protocol client.

The famous ssh client is putty and terminal who runs in port 22.

The software ports required for this project to be open is ssh which is on 22 and http port in order access webserver which runs on port 80 that's it, we are only allowing traffic from 22 and 80 so we need to configure the security groups like that and coming to outbound traffic we can kept it to open because our machine can communicate with another device doesn't make any problem. Coming to the architecture you can create virtual private cloud and which can associate over the particular region of availability zone. Now we can deploy our instance in any of the availability zone and other important thing is virtual machine itself creates extra user namely ec2-user for Linux and Ubuntu user for the Ubuntu machine respectively to all machines with their respective way.

Now, if you want to connect to the virtual machine remotely you need private key file of the machine you can download this while installing the machine. Suppose I created a server and its ip and dns name can be seen them I have used the key name for connect this machine is my-key.pem file so in the terminal you need to type:

```
ssh -i my_key.pem ubuntu@public\_ip\_or\_dns\_name
```

On using this you can connect to the instance, you can check in your terminal that appears [ubuntu@public_ip](#). All the above steps is only required to connect the instance we need to build our environment set up in order to run the application ,this project requires some packages with some software servers.

3.4.1 ENVIRONMEMNT SET UP

1. sudo apt-get update –this command let you to update the operating system packages.
2. yes | sudo apt-get install apache2 this command let you to install apache2 a famous webserver in order to run your php and html other web files.
3. sudo systemctl restart apache2: this command will restart your installed webserver apache2.

4. yes | sudo apt-get install php libapache2-mod-php php-mysql: This command let you install the php server and other packages now we need to install some packages in php for amazon services and php integration.
5. yes | sudo apt install zip unzip php-zip: This command let you to install zip and unzip packages to install sdks.
6. php -r "copy('https://getcomposer.org/installer', 'composer-setup.php');":
7. php -r "if (hash_file('sha384', 'composer-setup.php') ===
 '756890a4488ce9024fc62c56153228907f1545c228516cbf63f885e036d37e9a59d27d63f
 46af1d4d07ee0f76181c7d3') { echo 'Installer verified'; } else { echo 'Installer corrupt';
 unlink('composer-setup.php'); } echo PHP_EOL;"
8. php composer-setup.php: This will install composer which is essential for php aws sdk
9. sudo mv composer.phar /usr/local/bin/composer: Moving composer to bin folder in order access from anywhere
10. cd /var/www/html: Moving to html directory
11. sudo apt-get install -y php7.4-xml: The DOM, Simple XML, XML, and XSL modules for PHP are included in this package.
12. yes | sudo composer require aws/aws-sdk-php: Using composer, we are installing the php-aws-sdks
13. yes | sudo composer require phpmailer/phpmailer: This project requires php-smtp server in order to send emails to the users
14. yes | sudo apt install nodejs: This command let you install the nodejs
15. yes | sudo apt-get install awscli: This command let you install the aws command line interface means you can operate your aws account from your command line itself.
16. cd /var/www/html: Moving to html directory
17. aws s3 cp s3://my-final-internship-project/final-project/ ./ --recursive: This command let you to sync the project files from s3 to html directory.
18. mv login1.html index.html

Actually I created base page as login1.html so whenever you connect to DNS in browser automatically index.html will execute so that's why I am making this command. So that's it this is the environment set up required to run this project, literally it acts as platform as a service because we are creating the platform to run our application. Coming next to the software as a service it's like

installing licensed and free software's in the cloud is termed as software as a service, just like installing Big Commerce, Google Apps, Salesforce, Dropbox like that but our project won't require paas.

The other services used in this project and its role in this project:

3.4.2 AWS DYNAMO DB

It's a NoSQL data base i have used 3 tables in the project, one is to store the information COCONUT parameters, the other table is login-users which maintains the activity of user and other is credentials which can contain the user's personnel information used for logging. The coconut parameters contain the location of objects in s3 including images, text, csv files here just location of the objects exists not the actual data.

3.4.3 AWS_S3 (SIMPLE-STORAGE-SERVICE)

It is a storage service where you can store tons of data according to your data retrieval and access speeds and after certain amount of time the data goes to amazons glacier in compressed form this is the best part of it literally it acts as google drive you can set permissions where who can see your data public and private, each item is placed like object structure where you can access it through URL the interesting thing about s3 is its by default object data structure but you can change it to directory like structure by assigning names to them. Here I am using two s3 buckets one is for storing the project and other is for storing the multimedia data like images, text, csv files.

3.4.4 AWS-SNS

Amazons simple notification service this is a messaging service where you can send message to the specified service here in this project the target service from sns is amazons lambda, as soon as data uploads to s3 this sns will send message to amazon's lambda to run the script not only sns will notify but also can transport data to the lambda.

3.4.5 AWS-LAMBDA

AWS Lambda is a server less computing service that allows you to run code in response to events and automatically maintains the underlying compute resources for you. When data is successfully upload to s3 sns will send the information of bucket and directory in which the data uploaded so now the lambda function will execute, here data filtering techniques will occur and process the data results to dynamo db according to the single data set.

CHAPTER 4

DESIGN

4.1 INTRODUCTION

The UML diagrams make it simple to comprehend and create the application. UML is a modelling representation for analyzing, describing, generating, and documenting data about software-intensive systems. UML provides a standard method for writing a system model that includes conceptual notions.

4.2 UML DIAGRAMS

Model: A model is nothing but simplified representation of thing/product.

UML: UML is a software project artifact, visualization, specification, construction, and documentation language.

4.2.1 CLASS DIAGRAM

CLASS: Class is a collection of similar objects (or) class is a collection of attributes, operation, behaviour and relationship.

CLASS DIAGRAM

It is used to represent the static behavior of a system or it is used to model the structure of a software.

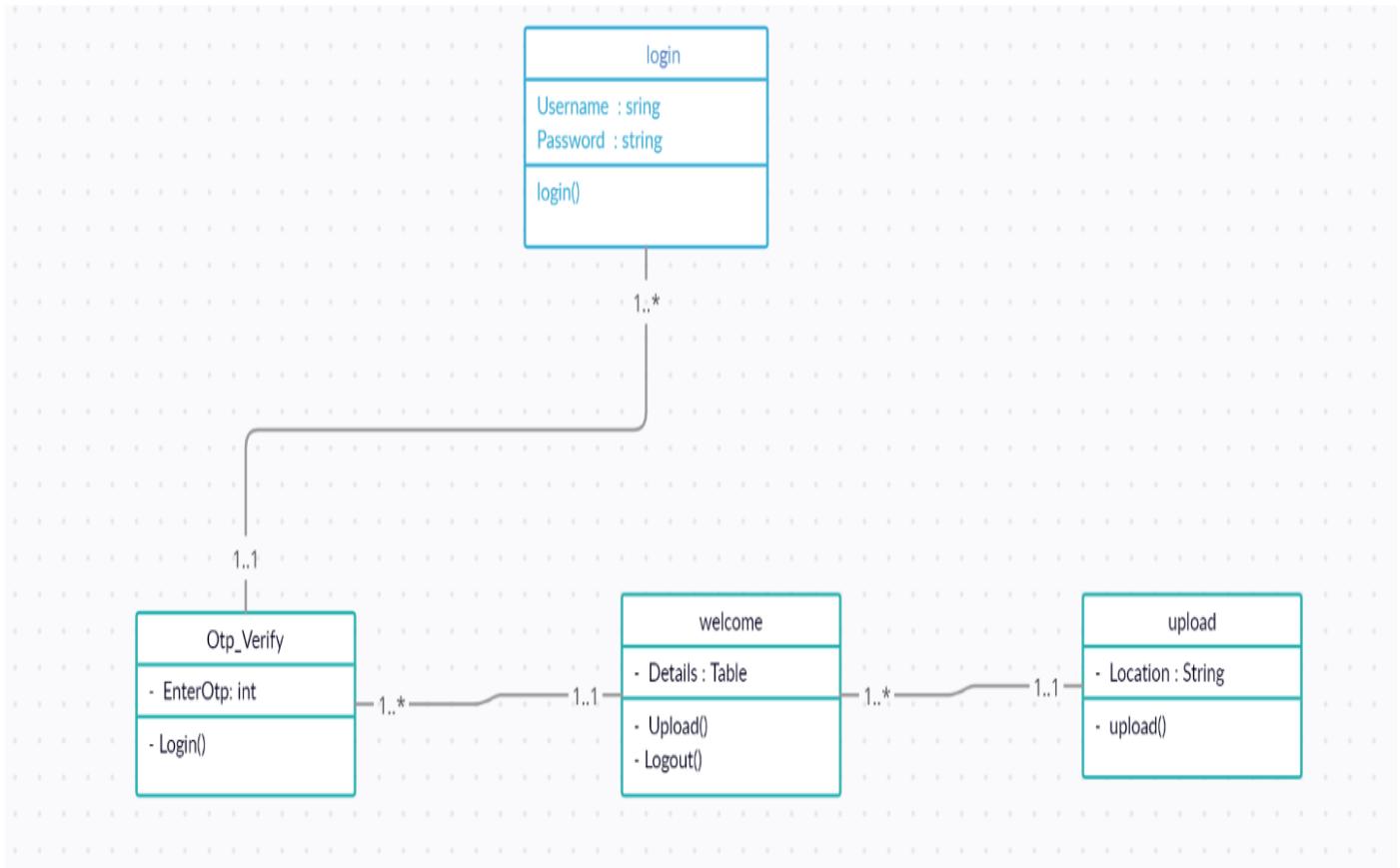


Fig. 4.1 Class diagram

4.2.2 USECASE DIAGRAM

A use case diagram describes a set of interactions between an actor and the system in order to achieve a particular goal. Prompted by some kind of problem for an actor. A use case diagram contains a set of use cases and can be developed from by telling others of how a system will be from differing goals.

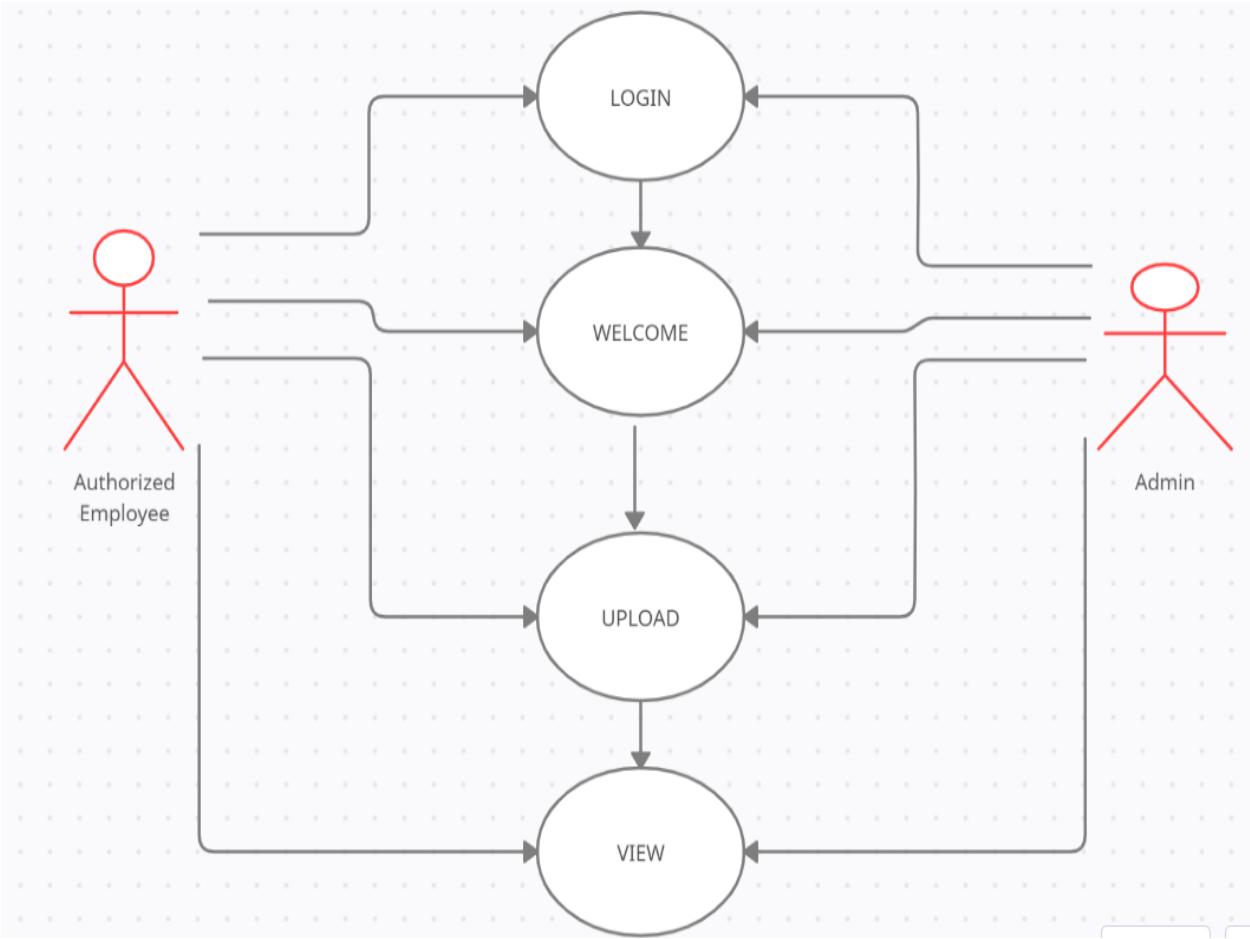


Fig. 4.2 Use case diagram

4.2.3 SEQUENCE DIAGRAM

Because it depicts how and in what order a set of items interacts, a sequence diagram is a sort of interaction diagram. Software engineers and business experts use these diagrams to understand the requirements for a new system or to record an existing process. Event diagrams and event scenarios are other names for sequence diagrams.

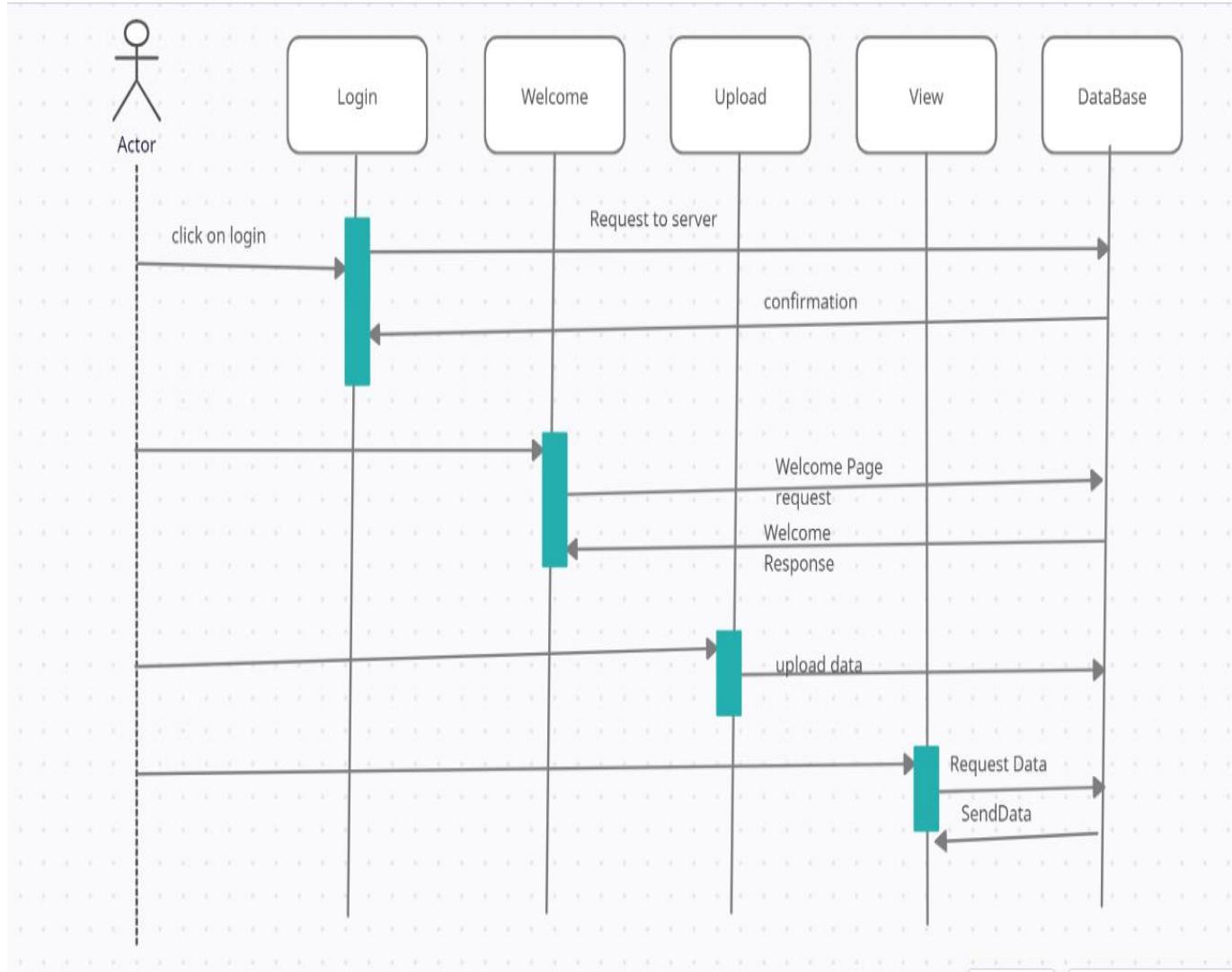


Fig. 4.3 Sequence diagram

CHAPTER 5

IMPLEMENTATION AND RESULTS

5.1 METHOD OF IMPLEMENTATION

FRONT END CODE

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta dir="ltr">
    <meta name="viewport" content="width=device-width,initial-scale=1.0">
    <title>MATIC</title>
    <link rel="stylesheet" href="css/login.css">

</head>
<body>

<div class="limiter">
<div class="containerimg" style="background-image: url('images/1.jpg');">
<div class="wraplogin">
<span class="loginform">
MATIC
</span>
<form class="loginformvalidate" action="login.php" method="POST">

<div class="wrapinputvalidate" data-validate = "Enter username">
<input class="input100" type="text" name="username" placeholder="User name">
<span class="focus-input100" data-placeholder=""></span>
</div>

<div class="wrapinputvalidate" data-validate="Enter password">
<input class="input100" type="password" name="password" placeholder="Password">
<span class="focus-input100" data-placeholder=""></span>
</div>

<div class="containerimg-form-btn m-t-32">
<input class="login100-form-btn" type="submit" name="submit" value="LOGIN">
</div>

</form>
</div>
</div>
</div>
<div id="dropDownSelect1"></div>
```

```
</body>
</html>
```

Login.css

```
@font-face {
    font-family: Ubuntu-Regular;
    src: url('../fonts/ubuntu/Ubuntu-Regular.ttf');
}
```

```
@font-face {
    font-family: Ubuntu-Bold;
    src: url('../fonts/ubuntu/Ubuntu-Bold.ttf');
}
* {
    margin: 0px;
    padding: 0px;
    box-sizing: border-box;
}
```

```
body, html {
    height: 100%;
    font-family: Ubuntu-Regular, sans-serif;
}
```

```
a {
    font-family: Ubuntu-Regular;
    font-size: 14px;
    line-height: 1.7;
    color: #666666;
    margin: 0px;
    transition: all 0.4s;
    -webkit-transition: all 0.4s;
    -o-transition: all 0.4s;
    -moz-transition: all 0.4s;
}
```

```
a:focus {
    outline: none !important;
}
a:hover {
    text-decoration: none;
    color: #fff;
}
```

```
/*-----*/
```

```
h1,h2,h3,h4,h5,h6 {  
    margin: 0px;  
}  
  
p {  
    font-family: Ubuntu-Regular;  
    font-size: 14px;  
    line-height: 1.7;  
    color: #666666;  
    margin: 0px;  
}  
  
ul, li {  
    margin: 0px;  
    list-style-type: none;  
}  
  
/*-----*/  
input {  
    outline: none;  
    border: none;  
}  
  
textarea {  
    outline: none;  
    border: none;  
}  
  
textarea:focus, input:focus {  
    border-color: transparent !important;  
}  
  
input:focus::-webkit-input-placeholder { color:transparent; }  
input:focus:-moz-placeholder { color:transparent; }  
input:focus::-moz-placeholder { color:transparent; }  
input:focus:-ms-input-placeholder { color:transparent; }  
  
textarea:focus::-webkit-input-placeholder { color:transparent; }  
textarea:focus:-moz-placeholder { color:transparent; }  
textarea:focus::-moz-placeholder { color:transparent; }  
  
textarea:focus:-ms-input-placeholder { color:transparent; }  
input::-webkit-input-placeholder { color: #555555; }  
input:-moz-placeholder { color: #555555; }  
input::-moz-placeholder { color: #555555; }
```

```
input:-ms-input-placeholder { color: #555555; }

textarea::-webkit-input-placeholder { color: #555555; }
textarea:-moz-placeholder { color: #555555; }
textarea::-moz-placeholder { color: #555555; }
textarea:-ms-input-placeholder { color: #555555; }

label {
    margin: 0;
    display: block;
}

/*-----*/
button {
    outline: none !important;
    border: none;
    background: transparent;
}

button:hover {
    cursor: pointer;
}

iframe {
    border: none !important;
}

/*///////////
[ Utility ]*/
.txt1 {
    font-family: Poppins-Regular;
    font-size: 13px;
    color: #e5e5e5;
    line-height: 1.5;
}

/*///////////
[ login ]*/
.limiter {
    width: 100%;

    margin: 0 auto;
}
.containerimg {
```

```
width: 100%;  
min-height: 100vh;  
display: -webkit-box;  
display: -webkit-flex;  
display: -moz-box;  
display: -ms-flexbox;  
display: flex;  
flex-wrap: wrap;  
justify-content: center;  
align-items: center;  
padding: 15px;  
  
background-repeat: no-repeat;  
background-position: center;  
background-size: cover;  
position: relative;  
z-index: 1;  
}  
  
.containerimg::before {  
content: "";  
display: block;  
position: absolute;  
z-index: -1;  
width: 100%;  
height: 100%;  
top: 0;  
left: 0;  
background-color: rgba(0,0,0,0.65);  
}  
  
.wrap-login100 {  
width: 390px;  
border-radius: 10px;  
overflow: hidden;  
  
background: transparent;  
}  
  
/*-----
```

[Form]*/

```
.login100-form {  
width: 100%;
```

```
border-radius: 10px;
background-color: #fff;
}

.login100-form-logo {
font-size: 60px;
color: #333333;

display: -webkit-box;
display: -webkit-flex;
display: -moz-box;
display: -ms-flexbox;
display: flex;
justify-content: center;
align-items: center;
width: 120px;
height: 120px;
border-radius: 50%;
background-color: #fff;
margin: 0 auto;
}

.login100-form-title {
font-family: Ubuntu-Bold;
font-size: 28px;
color: #fff;
line-height: 1.2;
text-align: center;
text-transform: uppercase;
margin: 20px 0px;
display: block;
}

/*
-----[ Input ]-----
.wrap-input100 {
width: 100%;
position: relative;
border-bottom: 1px solid #e6e6e6;

padding: 29px 0;
}

.input100 {
```

```
font-family: Ubuntu-Regular;
font-size: 20px;
color: #555555;
line-height: 1.2;

display: block;
width: 100%;
height: 50px;
background: transparent;
padding: 0 10px 0 80px;
-webkit-transition: all 0.4s;
-o-transition: all 0.4s;
-moz-transition: all 0.4s;
transition: all 0.4s;
}

/*-----*/
.focus-input100 {
position: absolute;
display: block;
width: 100%;
height: 100%;
top: 0;
left: 0;
pointer-events: none;
}

.focus-input100::before {
content: "";
display: block;
position: absolute;
bottom: -1px;
left: 0;
width: 0;
height: 1px;

-webkit-transition: all 0.4s;
-o-transition: all 0.4s;
-moz-transition: all 0.4s;
transition: all 0.4s;

background: #d41872;
background: -webkit-linear-gradient(left, #a445b2, #d41872, #fa4299);
background: -o-linear-gradient(left, #a445b2, #d41872, #fa4299);
background: -moz-linear-gradient(left, #a445b2, #d41872, #fa4299);
background: linear-gradient(left, #a445b2, #d41872, #fa4299);
```

```
}
```

```
.focus-input100::after {  
    font-family: Linearicons-Free;  
    font-size: 18px;  
    color: #999999;  
  
    content: attr(data-placeholder);  
    display: block;  
    width: 100%;  
    position: absolute;  
    top: 40px;  
    left: 35px;
```

```
-webkit-transition: all 0.4s;  
-o-transition: all 0.4s;  
-moz-transition: all 0.4s;  
transition: all 0.4s;  
}
```

```
.input100:focus {  
    padding-left: 60px;  
}
```

```
.input100:focus + .focus-input100::after {  
    left: 23px;  
    color: #d41872;  
}
```

```
.input100:focus + .focus-input100::before {  
    width: 100%;  
}
```

```
.has-val.input100 + .focus-input100::after {  
    left: 23px;  
    color: #d41872;  
}
```

```
.has-val.input100 + .focus-input100::before {  
    width: 100%;  
}  
  
.has-val.input100 {
```

```
    padding-left: 60px;
```

```

}

/*
[ Button ]*/
.containerimg-form-btn {
  width: 100%;
  display: -webkit-box;
  display: -webkit-flex;
  display: -moz-box;
  display: -ms-flexbox;
  display: flex;
  flex-wrap: wrap;
  justify-content: center;
}

.login100-form-btn {
  font-family: Ubuntu-Bold;
  font-size: 18px;
  color: #fff;
  line-height: 1.2;
  text-transform: uppercase;

  display: -webkit-box;
  display: -webkit-flex;
  display: -moz-box;
  display: -ms-flexbox;
  display: flex;
  justify-content: center;
  align-items: center;
  padding: 0 20px;
  margin: 20px 0px;
  min-width: 160px;
  height: 42px;
  border-radius: 21px;

  background: #d41872;
  background: -webkit-linear-gradient(left, #a445b2, #d41872, #fa4299);
  background: -o-linear-gradient(left, #a445b2, #d41872, #fa4299);
  background: -moz-linear-gradient(left, #a445b2, #d41872, #fa4299);
  background: linear-gradient(left, #a445b2, #d41872, #fa4299);
  position: relative;
  z-index: 1;

  -webkit-transition: all 0.4s;
  -o-transition: all 0.4s;
}

```

```
-moz-transition: all 0.4s;  
transition: all 0.4s;  
}  
  
.login100-form-btn::before {  
content: "";  
display: block;  
position: absolute;  
z-index: -1;  
width: 100%;  
height: 100%;  
border-radius: 21px;  
background-color: #555555;  
top: 0;  
left: 0;  
opacity: 0;  
  
-webkit-transition: all 0.4s;  
-o-transition: all 0.4s;  
-moz-transition: all 0.4s;  
transition: all 0.4s;  
}  
  
.login100-form-btn:hover {  
background-color: transparent;  
}  
  
.login100-form-btn:hover::before {  
opacity: 1;  
}
```

```
/*-----  
[ Alert validate ]*/
```

```
.validate-input {  
position: relative;  
}  
  
.alert-validate::before {  
content: attr(data-validate);  
position: absolute;  
max-width: 70%;  
background-color: #fff;  
border: 1px solid #c80000;
```

```
border-radius: 2px;
padding: 4px 25px 4px 10px;
top: 50%;
-webkit-transform: translateY(-50%);
-moz-transform: translateY(-50%);
-ms-transform: translateY(-50%);
-o-transform: translateY(-50%);
transform: translateY(-50%);
right: 10px;
pointer-events: none;

font-family: Ubuntu-Bold;
color: #c80000;
font-size: 13px;
line-height: 1.4;
text-align: left;

visibility: hidden;
opacity: 0;

-webkit-transition: opacity 0.4s;
-o-transition: opacity 0.4s;
-moz-transition: opacity 0.4s;
transition: opacity 0.4s;
}
```

```
.alert-validate::after {
content: "\f12a";
font-family: FontAwesome;
font-size: 16px;
color: #c80000;

display: block;
position: absolute;
top: 50%;
-webkit-transform: translateY(-50%);
-moz-transform: translateY(-50%);
-ms-transform: translateY(-50%);
-o-transform: translateY(-50%);
transform: translateY(-50%);
right: 15px;
}

.alert-validate:hover:before {
visibility: visible;
opacity: 1;
}
```

```

@media (max-width: 992px) {
  .alert-validate::before {
    visibility: visible;
    opacity: 1;
  }
}

```

Table.css

```

tr,td,th {
  border: 1px solid lightgray;
}

```

BACKEND CODE

Login.php

```

<?php
session_start();
include 'db-s3-sns.php';

$_SESSION["verify"] = "false";
$_SESSION['activity']="";

$username = $_POST['username'];

$password=$_POST['password'];
// $username="saikumar";
// $password="12345";
$_SESSION['username']=$username;
$_SESSION['time-stamp']=new DateTime(date("Y-m-d h:i:s"));
if(isset($_POST['username']) and isset($_POST['password']))
{
  $password=hash("sha256",$password);
  $key = $marshaler->marshalJson(
    [
      "username": ".$username .",
      "password": ".$password."
    ]
  );
}

```

```

}

');

$params = [
    'TableName' => 'credentials',
    'Key' => $key
];

try{

$result = $dynamodbclient->getItem($params);
if(sizeof($result['Item'])==3)
{
    //echo $result['Item']['mail'][S];
$_SESSION["verify"] = "true";
$_SESSION['status']="success";
$_SESSION['mail']=$result['Item']['mail'][S];
include 'otpmail.php';
header( "Location: otp.php" );
exit();

}
else
{
    echo 'unsuccessful login';
$item = $marshaler->marshalJson(
    {
        "time-stamp": "'.$_SESSION['time-stamp']->format('Y-m-d H:i:s').'",
        "username": "'.$username.'",
        "status":"failure"
    }
);

$params=[

'TableName'=>'login-users',
'Item'=>$item
];

$dynamodbclient->putItem($params);
header( "Location: login1.html" );

exit();
}
}

catch (DynamoDbException $e) {
    echo "Unable to add item:\n";
    echo $e->getMessage() . "\n";
}

}

}

```

?>

Otp.php

```
<?php
session_start();
if(isset($_POST['submit']))
{
if($_POST['otp']==$_SESSION['otp'])
{ header("Location: table-fina.php");
exit();
}
else
{
echo '<script type ="text/JavaScript">';
echo 'alert("invalid otp please enter agian only 3 chances furtehr it will close")';
echo '</script>';
}
}
?>

<!DOCTYPE html>
<html lang="en">
<head>
<meta dir="ltr">
<meta name="viewport" content="width=device-width,initial-scale=1.0">
<title>MATIC</title>
<link rel="stylesheet" href="css/login.css">

</head>
<body>
<div class="limiter">
<div class="containerimg" style="background-image: url('images/1.jpg');">
<div class="wraplogin">
<span class="loginform">
MATIC
</span>
<form class="loginformvalidate" method="POST">

<div class="wrapinputvalidate" data-validate = "Enter username">
<input class="input100" type="text" name="otp" placeholder="enter-otp-
receievd-in-mail">
<span class="focus-input100" data-placeholder=""></span>
</div>
<div class="containerimg-form-btn m-t-32">
```

```

        <input class="login100-form-btn" type="submit" name="submit"
value="LOGIN">
    </div>

            </form>
        </div>
    </div>
</div>

<div id="dropDownSelect1"></div>

</body>
</html>

```

Otpmail.php

```

<?php
require '../vendor/autoload.php';

use PHPMailer\PHPMailer\PHPMailer;
use PHPMailer\PHPMailer\Exception;
$mail = new PHPMailer(true);

try{
$mail->isSMTP();
$mail->Host= 'smtp.gmail.com;';
$mail->SMTPAuth = true;

$mail->Username = 'saiscommercial@gmail.com';
$mail->Password = 'Saiscommercial@955';
$mail->SMTPSecure = 'tls';
$mail->Port = 587;
$mail->setFrom('saiscommercial@gmail.com', 'matic');
$mail->addAddress($_SESSION['mail']);
$ran_num= random_int(100000, 999999);
$_SESSION['otp']=$ran_num;
$mail->Subject = 'otp for matic';
$mail->Body = $ran_num ;
$mail->send();

        echo "Mail has been sent successfully!";
} catch (Exception $e) {
    echo "Message could not be sent. Mailer Error: {$mail->ErrorInfo}";
}

```

?>

Finaltable.php

```
<?php
include 'db-s3-sns.php';
session_start();
if($_SESSION['verify']=='false')
{
    header('Location: login1.html');

exit();
}

if(isset($_POST['logout']))
{
$dat=date("Y-m-d h:i:sa");
$cur=new DateTime($dat);

$diff=$cur->diff($_SESSION['time-stamp']);

$duration=((($diff->days * 24 * 60) + ($diff->h * 60) + $diff->i));
//print_r($_SESSION['activity']);
$item = $marshaler->marshalJson(
    [
        "time-stamp": "'.$_SESSION['time-stamp']->format('Y-m-d H:i:sa').'",
        "username": "'.$_SESSION['username'].'",
        "status": "'.$_SESSION['status'].'",
        "duration(mins)": "'.$duration.'",
        "logout": "'.$dat.'",
        "activity": "'.$_SESSION['activity'].'""
    ]
);
$params=[

    'TableName'=>'login-users',
    'Item'=>$item
];
$dynamodbclient->putItem($params);
session_destroy();
    header( "Location: login1.html" );

exit();
}
elseif(isset($_POST['upload']))
{
```

```

header("Location: upload.php");
exit();
}

?>
<!DOCTYPE html>
<html>
<head>
    <link rel="stylesheet" href="css/table.css">
</head>
<body>
<h2 style="text-align: center;">welcome mr/ms <?php echo $_SESSION['username']; ?> </h2>

<form method="post">
<input type="submit" name="logout" value="logout">

    <input type="submit" name="upload" value="upload">
</form>
<table style="width:100%;border: 1px solid lightgray;">
<tr>
<th>ID</th>
<th>RGB</th>
<th>THERMAL</th>
<th>SPECTROSCOPY</th>
<th>ULTRASONIC</th>
</tr>
<?php
$params = [
    'TableName' => 'CoconutParametres',
    'ProjectionExpression' => '#id,rgb,thermal,spectroscopy,ultrasonic',
    'ExpressionAttributeNames'=> [ '#id' => 'id' ]
];
try{
    while (true) {
$result = $dynamodbclient->scan($params);
        foreach ($result['Items'] as $i) {
$coconut=$marshaler->unmarshalItem($i);
echo "<tr> <td>{$coconut['id']}

```

```

$x=0;
foreach ($coconut['thermal'] as $rgb)
{$x=$x+1;
echo "<a href=$rgb> thermal$x </a>";
}

echo " $x</td><td>";
$x=0;
foreach ($coconut['spectroscopy'] as $rgb)
{$x=$x+1;
echo "<a href=$rgb> spectroscopy$x </a>";
}
echo " $x</td><td>";
$x=0;
foreach ($coconut['ultrasonic'] as $rgb)
{$x=$x+1;
echo "<a href=$rgb> ultrasonic$x </a>";
}
echo " $x</td></tr>";
flush();
ob_flush();
}
if (isset($result['LastEvaluatedKey'])) {
    $params['ExclusiveStartKey'] = $result['LastEvaluatedKey'];
} else {
    break;
}
}

catch (DynamoDbException $e) {
    echo "Unable to scan:\n";
    echo $e->getMessage() . "\n";
}

?>

</table>
</body>

</html>

```

Aws_lambda_script

```
import boto3
import json
import os
import urllib
def lambda_handler(event,context):
    s3=boto3.client('s3')
    bucket = event['Records'][0]['s3']['bucket']['name']
    key = urllib.parse.unquote_plus(event['Records'][0]['s3']['object']['key'], encoding='utf-8')
    print(bucket,key)
    response =s3.get_object(Bucket=bucket, Key=key)
    matter=response['Body'].read()
    print(matter)
```

5.2 OUTPUTSCREENS AND RESULT ANALYSIS

Home page/Login page

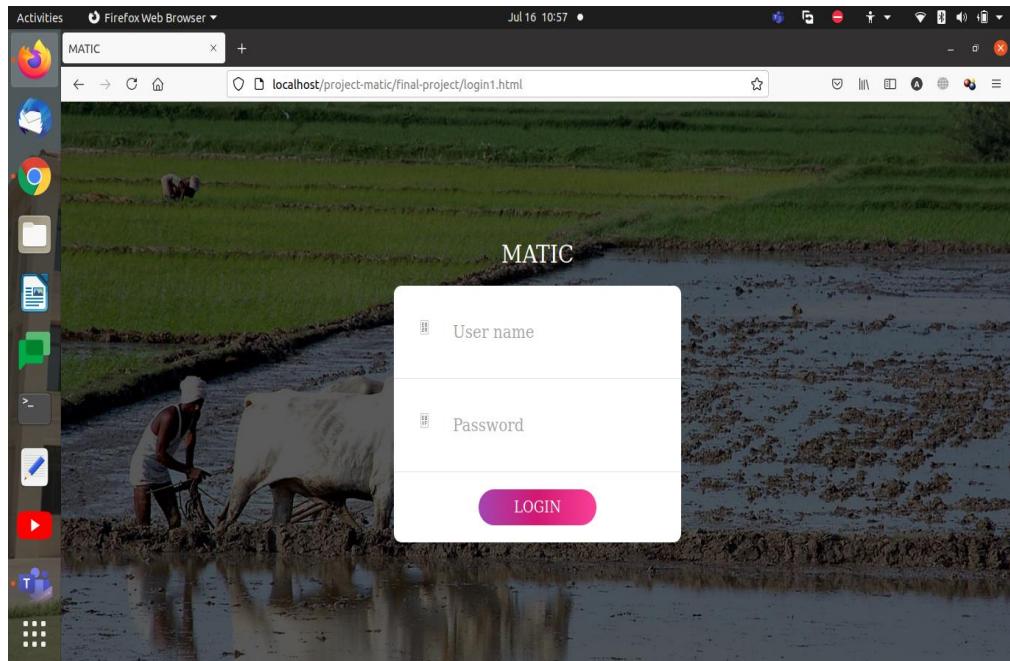


Fig. 5.1 login page

Otp Enter page

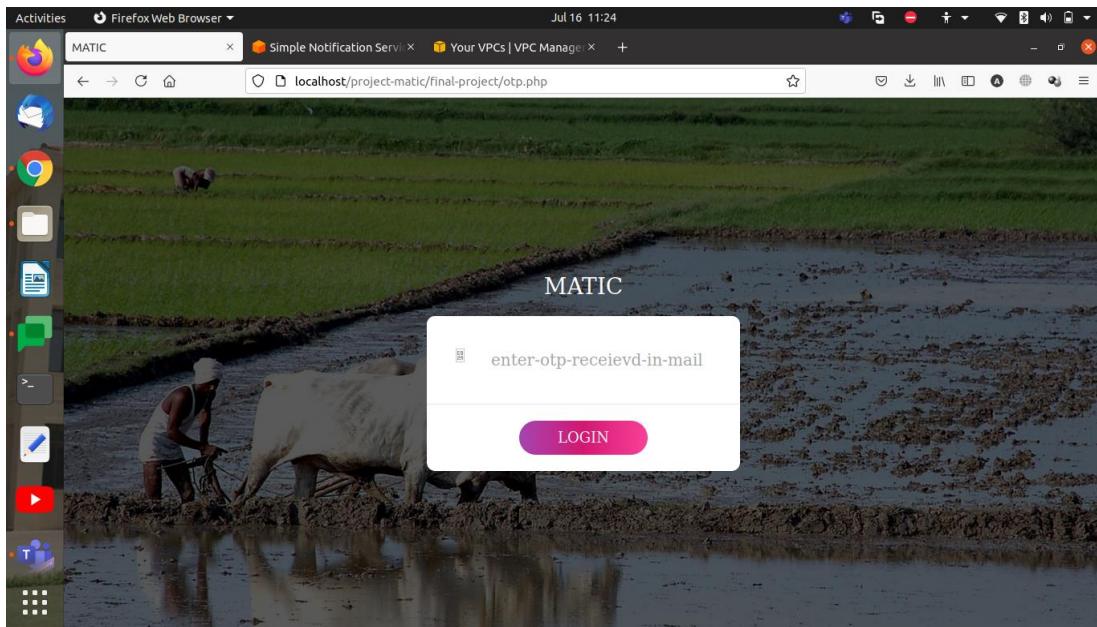


Fig. 5.2 otp page

Otp in mail

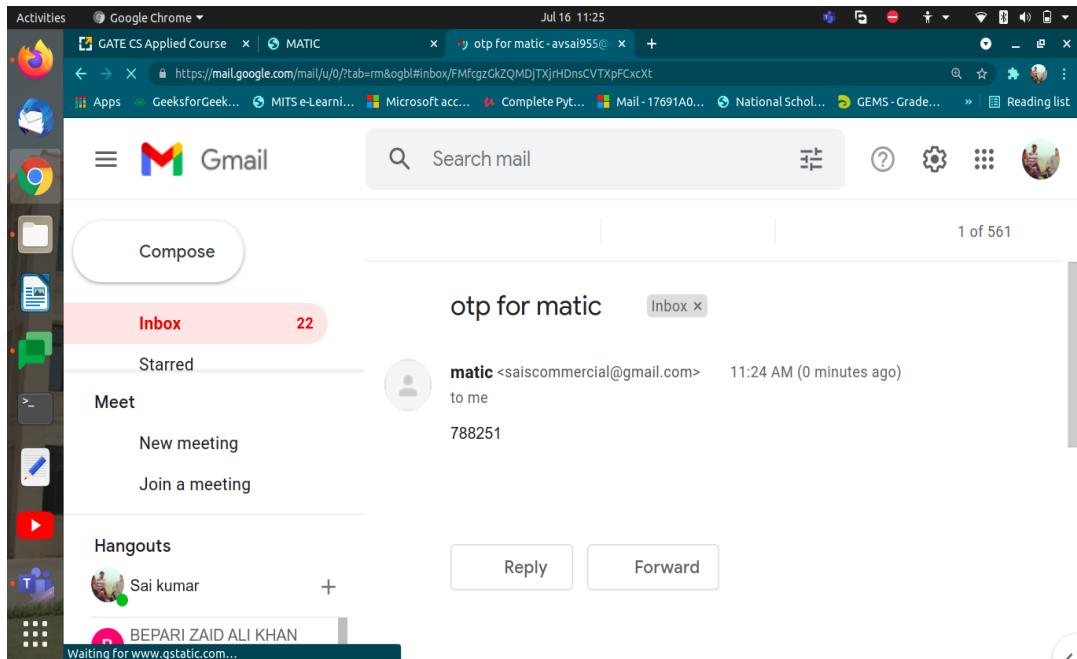


Fig. 5.3 otp to mail

Welcome page

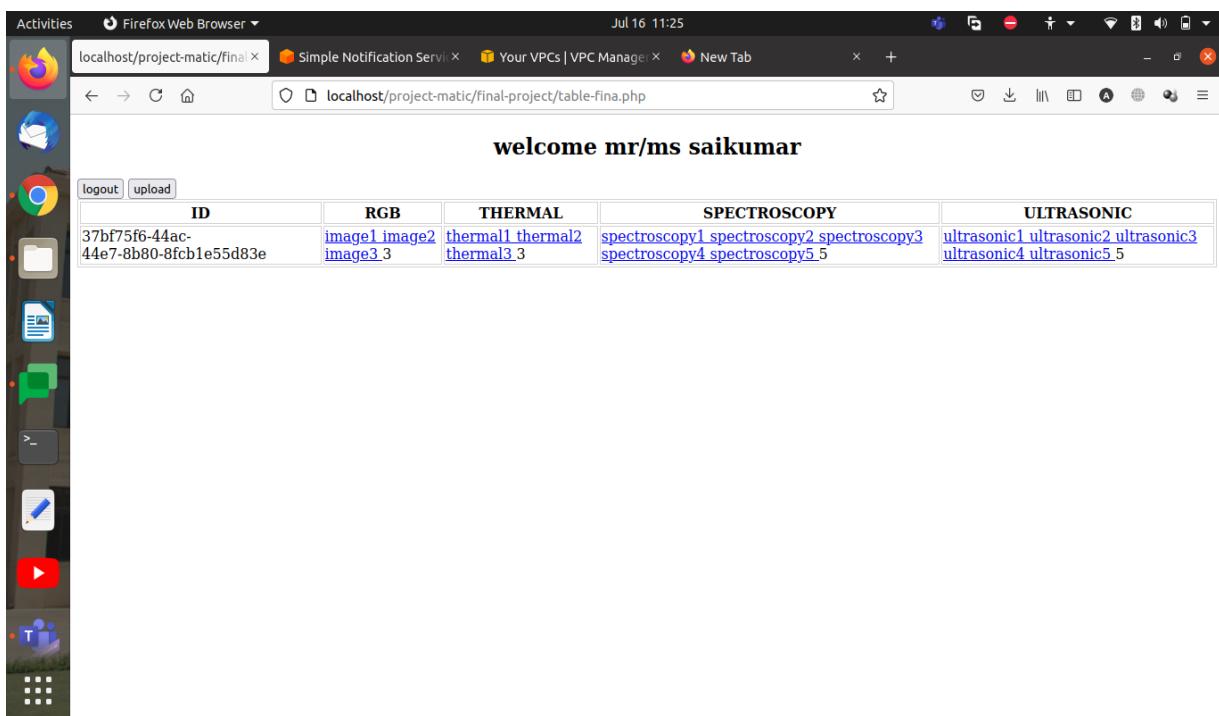


Fig. 5.4 welcome page

Upload page

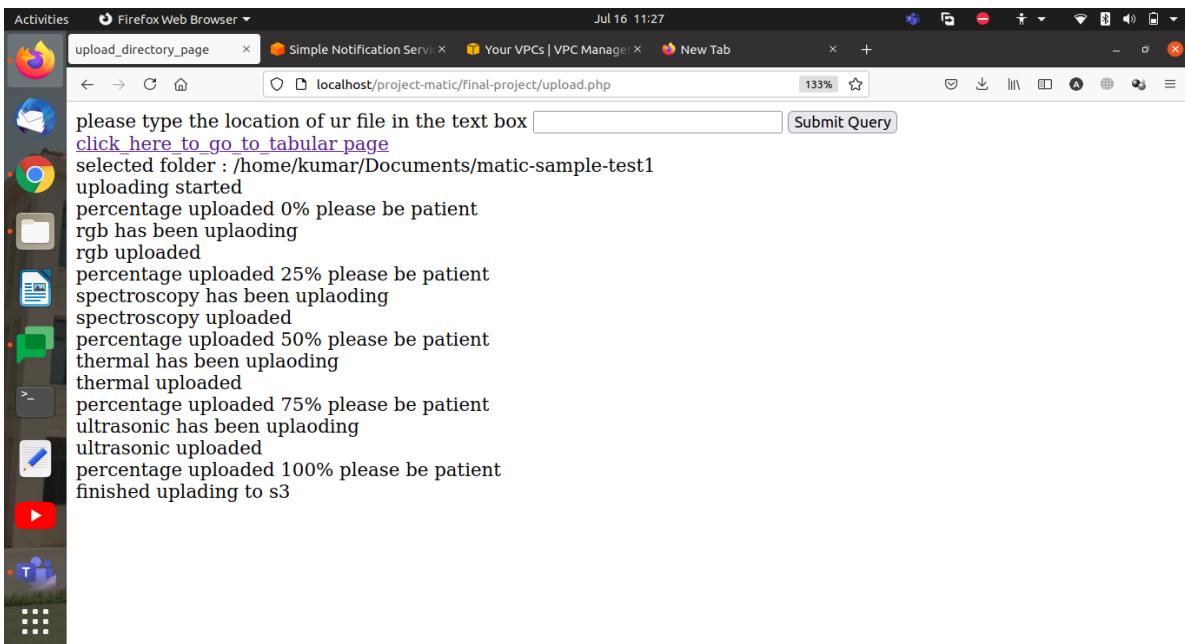


Fig. 5.5 upload page

Welcome page

The screenshot shows a Firefox browser window titled "localhost/project-matic/final-project/table-fina.php". The page displays a welcome message and a table of data:

welcome mr/ms saikumar

ID	RGB	THERMAL	SPECTROSCOPY	ULTRASONIC
37bf75f6-44ac-44e7-8b80-8fcfb1e55d83e	image1 image2 image3 3	thermal1 thermal2 thermal3 3	spectroscopy1 spectroscopy2 spectroscopy3 spectroscopy4 spectroscopy5 5	ultrasonic1 ultrasonic2 ultrasonic3 ultrasonic4 ultrasonic5 5
02f0c4d0-eb5b-4690-a274-480de1436349	image1 image2 image3 3	thermal1 thermal2 thermal3 3	spectroscopy1 spectroscopy2 spectroscopy3 spectroscopy4 spectroscopy5 5	ultrasonic1 ultrasonic2 ultrasonic3 ultrasonic4 ultrasonic5 5

Fig. 5.6 welcome page

Dashboard

The screenshot shows the AWS IAM Management Console dashboard. The left sidebar includes links for Identity and Access Management (IAM) such as Dashboard, Access management, Access reports, and Best practices. The main content area displays the IAM dashboard with sections for Sign-in URL for IAM users in this account, IAM resources (Users: 2, Roles: 6, User groups: 0, Identity providers: 0), and Customer managed policies: 3. It also lists Best practices and provides links for Additional information, IAM documentation, Videos, IAM release history and additional resources, Tools, Quick links, and Related services.

Fig. 5.7 dashboard page

Login users data base

The screenshot shows the AWS DynamoDB Items page. The left sidebar lists options like Dashboard, Tables, Items (New), PartiQL editor, Backups, Exports to S3, Reserved capacity, DAX, Clusters, Subnet groups, Parameter groups, Events, and Revert to the current console. The main content area shows a table titled 'Tables (3)' with entries: 'CoconutParametres' (selected), 'credentials' (highlighted with a blue border), and 'login-users'. To the right, there's a 'credentials' section with a 'View table details' button, an 'Items returned (8)' section with a search bar, and a detailed list of items:

	username	password	mail
<input type="checkbox"/>	manohar	d933138859f...	manu.matic2020@gmail.com
<input type="checkbox"/>	ravi	18c43de4137...	ravikanthns1999@gmail.com
<input type="checkbox"/>	chaitanya	efc4fca5baa4...	n.chaitanya26@gmail.com
<input type="checkbox"/>	zaid	4eb84dcc727...	zaldikhan51@gmail.com
<input type="checkbox"/>	salkumar	b47174267be...	avsal955@gmail.com
<input type="checkbox"/>	gayathri	360949022bf...	gayathrimiduna2000@gmail.c...
<input type="checkbox"/>	naveen	b6818b70e8b...	naveenkumar199817@gmail.c...
<input type="checkbox"/>	shanmugh	dcde954d485...	shanmuga2112@gmail.com

Fig. 5.8 user database page

Log database

The screenshot shows the AWS Management Console for Amazon DynamoDB. The left sidebar has 'Services' expanded, with 'Items' selected. The main content area is titled 'login-users' and shows a table of items with the following data:

time-sta...	activity	duration...	logout	status	username
2021-07-1...				failure	saikumar
2021-07-1...				failure	saikumar
2021-06-1...				failure	saikumar
2021-06-1...	action :upload,	1	2021-06-1...	success	saikumar
2021-06-1...	action :upload, action :upload, uploaded : matic-sample-tes...	3	2021-06-1...	success	saikumar
2021-07-1...				failure	saikumar
2021-07-1...				failure	saikumar

Fig. 5.9 login database page

Amazon S3 Buckets

The screenshot shows the AWS Management Console for Amazon S3. The left sidebar has 'Services' expanded, with 'Amazon S3' selected. The main content area is titled 'Amazon S3' and shows a table of buckets with the following data:

Name	AWS Region	Access	Creation date
elasticbeanstalk-us-east-1-544826746679	US East (N. Virginia) us-east-1	Objects can be public	May 18, 2021, 22:30:13 (UTC+0:30)
my-final-internship-project	US East (N. Virginia) us-east-1	Objects can be public	June 12, 2021, 15:30:51 (UTC+0:30)
my-rgb-bucket-matic	US East (N. Virginia) us-east-1	⚠️ Public	May 15, 2021, 07:30:05 (UTC+0:30)

Fig. 5.10 aws S3 bucket

Data storing bucket

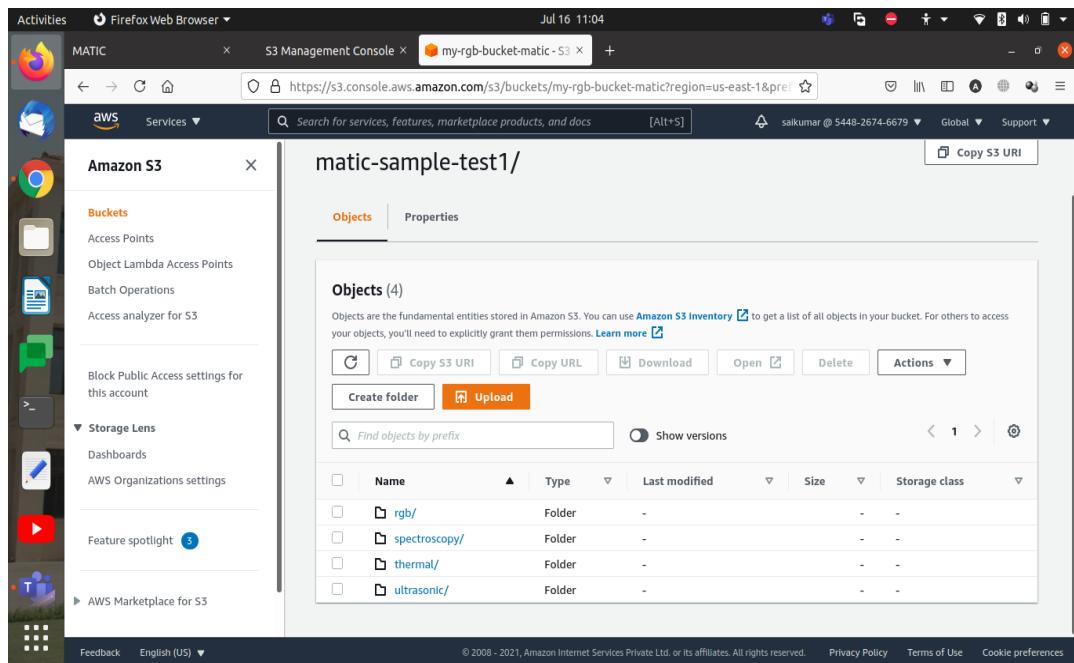


Fig. 5.11 data storing bucket

Dynamo DB

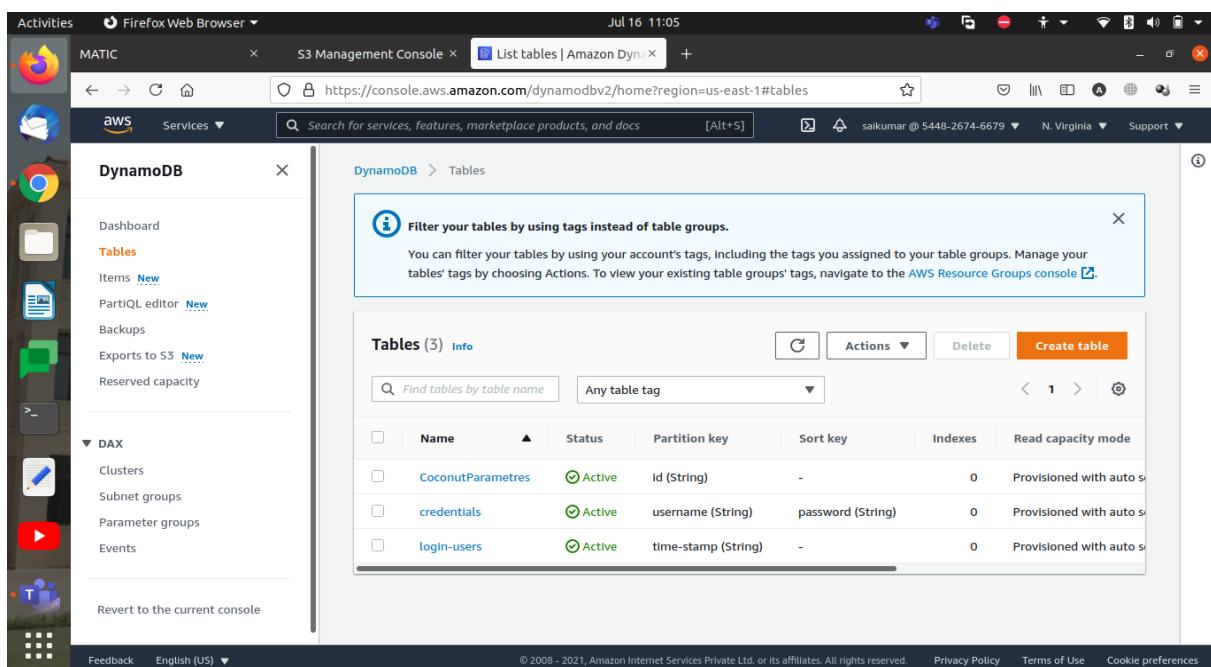


Fig. 5.12 Dynamo DB

The screenshot shows the AWS DynamoDB Management Console. On the left, the navigation pane includes 'Dashboard', 'Tables', 'Items New', 'Partition editor New', 'Backups', 'Exports to S3 New', and 'Reserved capacity'. Under 'DAX', there are 'Clusters', 'Subnet groups', 'Parameter groups', and 'Events'. A link to 'Revert to the current console' is also present. The main area displays a table titled 'Tables (3)'. A search bar at the top right says 'Find tables by name'. Below it, a table lists three tables: 'CoconutParametres', 'credentials' (which is selected and highlighted in blue), and 'login-users'. The 'credentials' table has columns: 'username', 'password', and 'mail'. The data rows are:

	username	password	mail
<input type="checkbox"/>	manohar	d933138859f...	manu.matic2020@gmail.com
<input type="checkbox"/>	ravi	18c43de4137...	ravikanthns1999@gmail.com
<input type="checkbox"/>	chaitanya	efc4fc5baa4...	n.chaitanya26@gmail.com
<input type="checkbox"/>	zaid	4eb84dcc727...	zaldalikhan51@gmail.com
<input type="checkbox"/>	salkumar	b47174267be...	avsa1955@gmail.com
<input type="checkbox"/>	gayathri	360949022bf...	gayathrimiduna2000@gmail.c...
<input type="checkbox"/>	naveen	b6818b70e8b...	naveenkumar199817@gmail.c...
<input type="checkbox"/>	shanmugh	dcde954d485...	shanmuga2112@gmail.com

Fig. 5.13 Dynamo DB

Lambda function

The screenshot shows the AWS Lambda Management Console. The left sidebar shows 'Lambda > Functions > my-s3-turn-db'. The main area displays the 'Function overview' tab for the 'my-s3-turn-db' function. It shows the function name, a visual representation of triggers (SNS), layers (0), and destinations (0). Buttons for 'Throttle', 'Copy ARN', and 'Actions' are available. To the right, detailed information is provided:

- Description: -
- Last modified: 1 month ago
- Function ARN: arn:aws:lambda:us-east-1:544826746679:function:my-s3-turn-db

Below this, tabs for 'Code', 'Test', 'Monitor', 'Configuration', 'Aliases', and 'Versions' are visible. The 'Code source' section shows an 'Upload from' button.

Fig. 5.14 lambda function

The screenshot shows the AWS Lambda function code editor within the S3 Management Console. The URL in the browser is <https://console.aws.amazon.com/lambda/home?region=us-east-1#/functions/my-s3-turn-db>. The code editor displays a Python script named `lambda_function.py` with the following content:

```
1 import boto3
2 import json
3 import os
4 import uuid
5 def lambda_handler(event,context):
6     s3=boto3.client('s3')
7     message= event['Records'][0]['sns']['Message']
8     print(message)
9     x=json.loads(message)
10    bucket=x['bucket']
11    directory=x['directory']+'/'
12    #buckets=rgb-bucket-matic
13    #directory=matic-data/
14    rgbi_images=[]
15    spectroscopy=[]
16    ultrasonic=[]
17    print(directory)
18    s3_base="https://" + bucket + ".s3.amazonaws.com/"
19    for result in s3.list_objects_v2(Bucket=bucket,Prefix=directory)['Contents']:
20        ref=result['Key']
21        if ".BMT" in ref:
22            B_images.append(s3_base+ref)
23        elif ".jpg" in ref:
24            rgbi_images.append(s3_base+ref)
25        elif ".txt" in ref:
26            spectroscopy.append(s3_base+ref)
27        else:
28            ultrasonic.append(s3_base+ref)
29
30
31
32
33
34    j=0
35    l=0
36    print(len(B_images))
```

Fig. 5.15 lambda function

CHAPTER 6

CONCLUSION

6.1 CONCLUSION

Based on all the diagrams we are able to design the required functionalities and the flow of data that is to be maintained between each of them. By doing all this we are able to maintain the application without any bugs and errors. All the diagrams that are developed show us the functionalities of the website.

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DIGITAL FRAUDS IN INDIA

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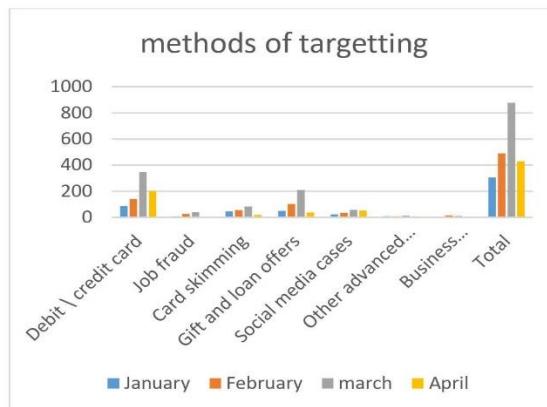
ABSTRACT

We are living in a modern world where any work can be done by machines and computers. We are in a digital era where most of our devices are connected to internet. People are using mobiles, laptops, smart watches, IoT devices a lot when compared to previous decades. Every personal information including bank details and photos are stored in their devices and becoming victims of scammers. Everyone who are using mobiles and laptops should know how people are becoming victims, you have to take some precautions to protect your data from hackers and scammers. Now a day's a data is more precious thing than anything in this world.

Keywords: Data Security, Social Media Frauds, Fishing Sites.

I. INTRODUCTION

People are living in a digital world and forgetting the reality that we are storing everything in our mobiles and laptops, we are giving a chance to hackers and scammers to steal our data. There are plenty of ways to scam you like social media, technical support, malware scams, mail frauds etc. All we have to do is, we should know how to protect our data. This is the reason which motivated me to create an awareness against digital frauds in India [1].



In the last decade, India has digitalized payment systems and due to demonetization digital payments has recorded an increase of 46.5% in total volume in financial year 2019. [2]

Estimated attacks in next 12 months



Social media frauds:

Everybody using social media, regardless of age and gender for connecting, meeting people in this so-called virtual world. Everyone have hundreds of followers including known and unknown people, that may contain fake profiles. [3], More than 90% of the fake profiles are created for harassing the known people.

	dollar lost in millions	cases
2016 Q2	7	1.2k
2016 Q3	8	1.4k
2016 Q4	9	1.9k
2017 Q1	10	2.2k
2017 Q2	12	2.2k
2017 Q3	22	2.4k
2017 Q4	14	3.1k
2018 Q1	23	3.4k
2018 Q2	28	3.9k
2018 Q3	28	4.3k
2018 Q4	23	4.4k
2019 Q1	22	3.7k
2019 Q2	26	4.7k
2019 Q3	42	6.8k
2019 Q4	44	8.2k
2020 Q1	61	8.8k
2020 Q2	56	15.9k

Most commonly used social medias for creating fake profiles are under

Facebook

Instagram

Twitter

LinkedIn

The commonly crimes being committed on social media are under

Hacking and fraud:

If anybody use your social media account for posting the embarrassing content without your permission is treated as hacking. Creating a fake profile with other details is treated as fraud and it is punishable crime.

Fake online friendship:

Lot of people are creating fake account with other details and making friends, after some days they will ask for money that they are in need and they will tell we will give it back.

Hidden URLs:

Don't blindly click on shorten URLs, you don't know where it is going to since it hides the full location. Clicking on that link may take you to site that you need or a site that installs malware to your computer. Use shorten link validator to validate and check the full location before clicking on it.

Phishing request:

When you click on an enclosed link, which takes you to the Facebook or Instagram site login page. If you enter your login credentials – and a cybercriminal have your password with total control. [4], Whenever you are entering login credentials, please check the whether you are entering in secured cite or not.

E.g.: - Instead of https it shows http or fake domain name like www.facebookk.com. Lot of people think this is official site but it's actually not.

Collecting data:

"Find out with our quiz! All of your friends have taken it!" hmm, this looks interesting, so you will enter your persona details including phone number. After that it shows your IQ score is more than your friends.

These type of quizzes collects your data to manipulate your online purchases and fraud SMS and mails are send.

Technical support scams:

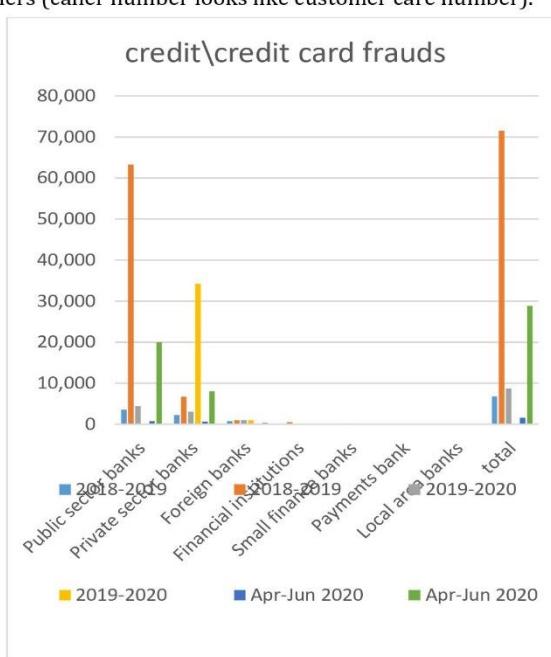
Most of the people are being the victims of this type of scams. Fake technical support team calls you and tell that your subscription period is completed and you need to renewal that. They will send you a fake link to pay the money, if you pay money, you don't get subscription or they ask you to install software's like TeamViewer, any desk to take the total control of your system. [5], No technical team ask for control of your system.

Lottery frauds:

Whenever you get a mail or SMS that you won gift in lucky draw, first verify that whether you applied for that or not. 95% of the lottery scammers send you scam mails or SMS that you won lottery, money is in airport customs please pay some tax to us get money. Don't pay money because its scam, if it is genuine, they may directly send to your home or to your bank account.

Debit and credit card service frauds:

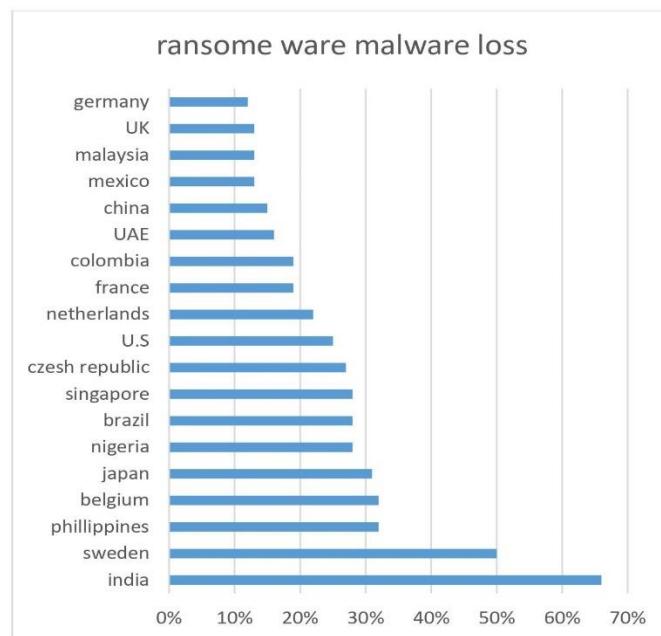
When you lost your debit or credit card, you will call or text to customer care to block card. Then you will get a call from hackers or scammers (caller number looks like customer care number).



[6], [7]. These hackers act as an authenticate representative and asks ATM card owner for sensitive information, then uses that for stealing money. According to bank rules, account owner should not share details like OTP, card details, expiry date, pin etc.

Malware frauds:

Whenever you install cracked software's or third party software's check for malicious virus using anti-virus software's and don't disable windows defender if you are using windows. It may contain malware. Malware like ransomware may be in cracked software's, after installing the software's it takes the total control of your system and encrypts the data. [8]. Hackers ask for money or bitcoin, if you don't pay your data will be deleted.



"Don't install software's or apps from unknown sources"

How to protect your data from malware :

installing software's or apps:

- Thinking twice about which software you install.
- Keeping all software up to date.
- Don't install cracked software.

Password management:

- Always use strong passwords.
- Use two step verification.
- Don't share passwords through social media.
- Use disk encryption and save recovery key in pen drives.

Virus detection:

- If you are using pc simply you can install antivirus and check for virus.
Ex: process explorer
Avast Antivirus
- But the scenario was a bit different in mobile [9].
Ex: check mobile data usage.
app permissions.
installed apps.

II. CONCLUSION

Everyone should aware about frauds and how they actually do that. Then only we can protect our data and money from scammers or hackers. We are living in a digital world where hackers can hack our data with in a blink of an eye (unknowingly we are giving our data to hackers).

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