

PENSION MANAGEMENT SYSTEM

TEAM MEMBERS

EMPLOYEE ID	NAME	RESPONSIBILITIES
911313	Vijayalakshmi P	Authorization Microservice Web portal MVC
911259	Bhuvaneshwaran K	Pension Process Microservice
911237	Srikanth Mallipeddi	Pension Disbursement Microservice
911345	Nishtha Sharma	Pension Details Microservice

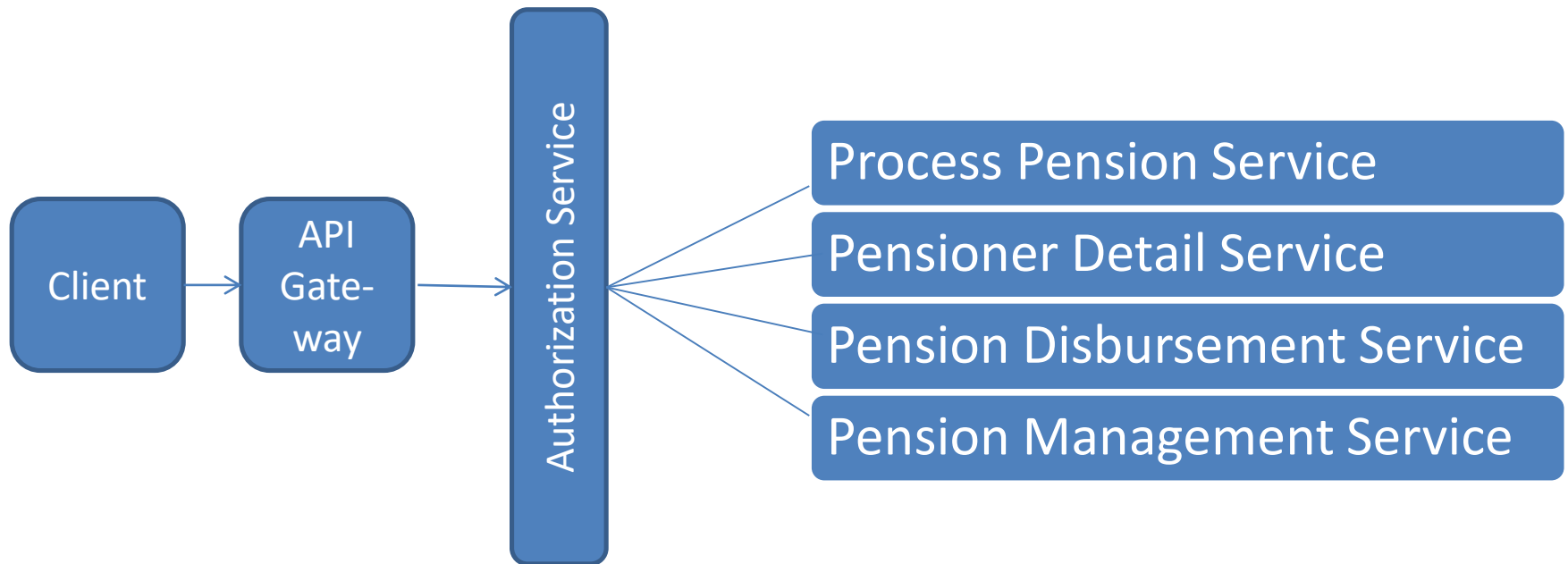
Guided By:- Ramanuj Das

Mentored By:- Susha Raghunath

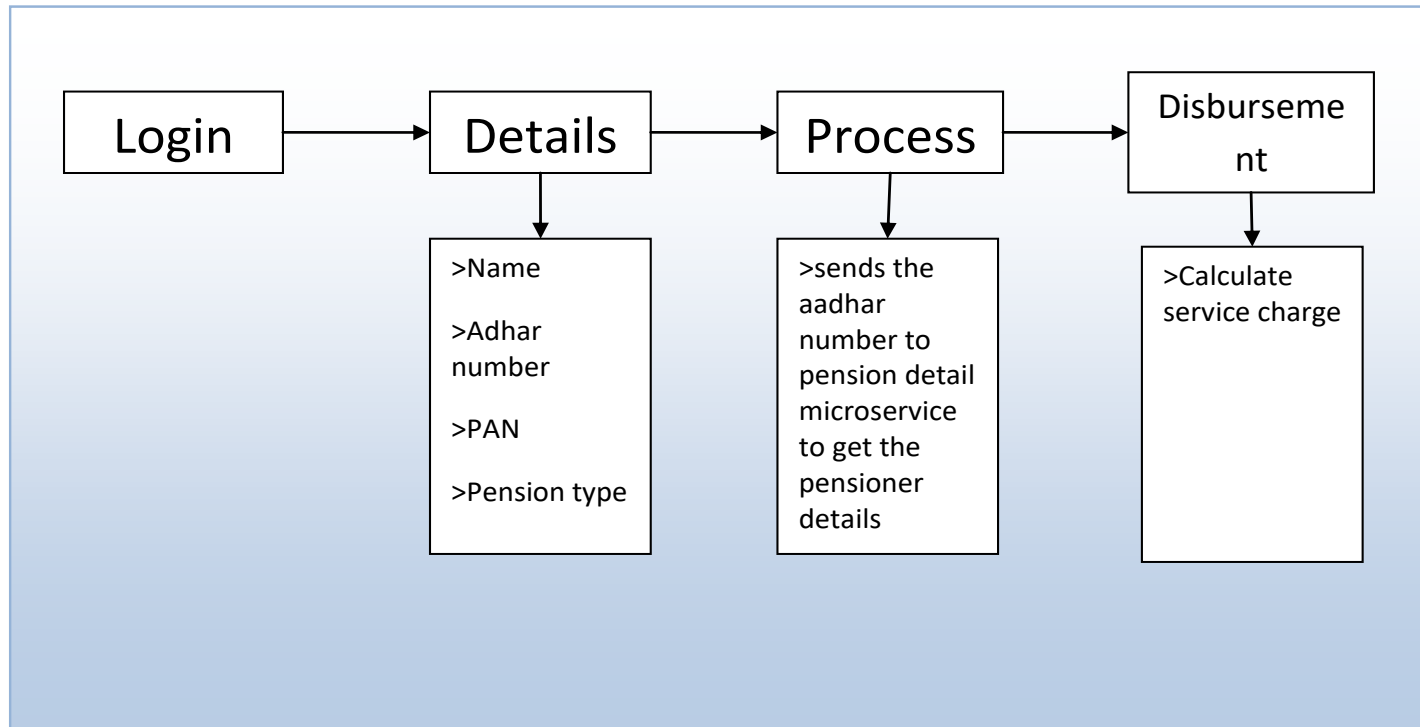
PROJECT OVERVIEW

- The aims of this application is to automate a portion of the Pension detail provisioning.
- This project covers pensioner detail provision, calculate provision, initiate pension disbursement.
- The application has four microservices which is Authorization, Details ,Disbursement and Process pension.

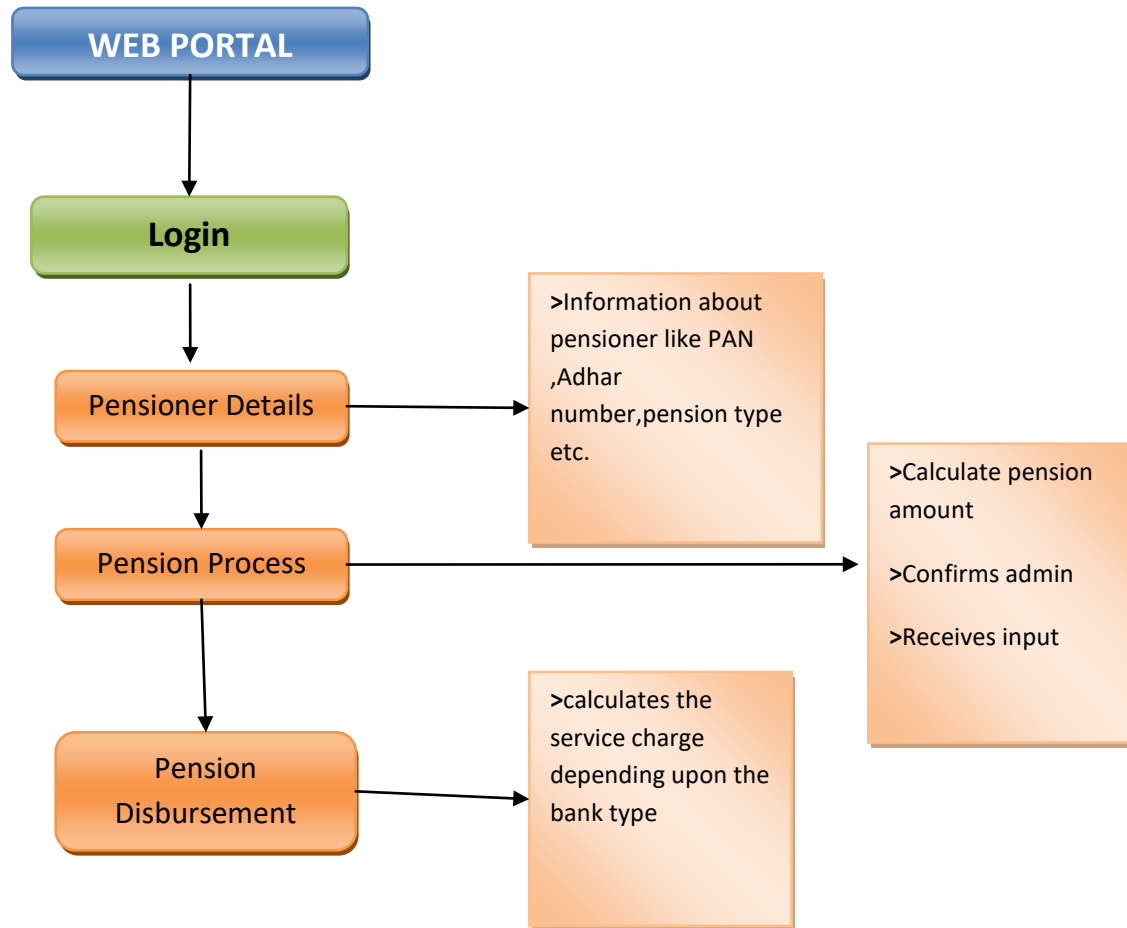
PROJECT OVERVIEW



PENSION MANAGEMENT SYSTEM-PROTOTYPE



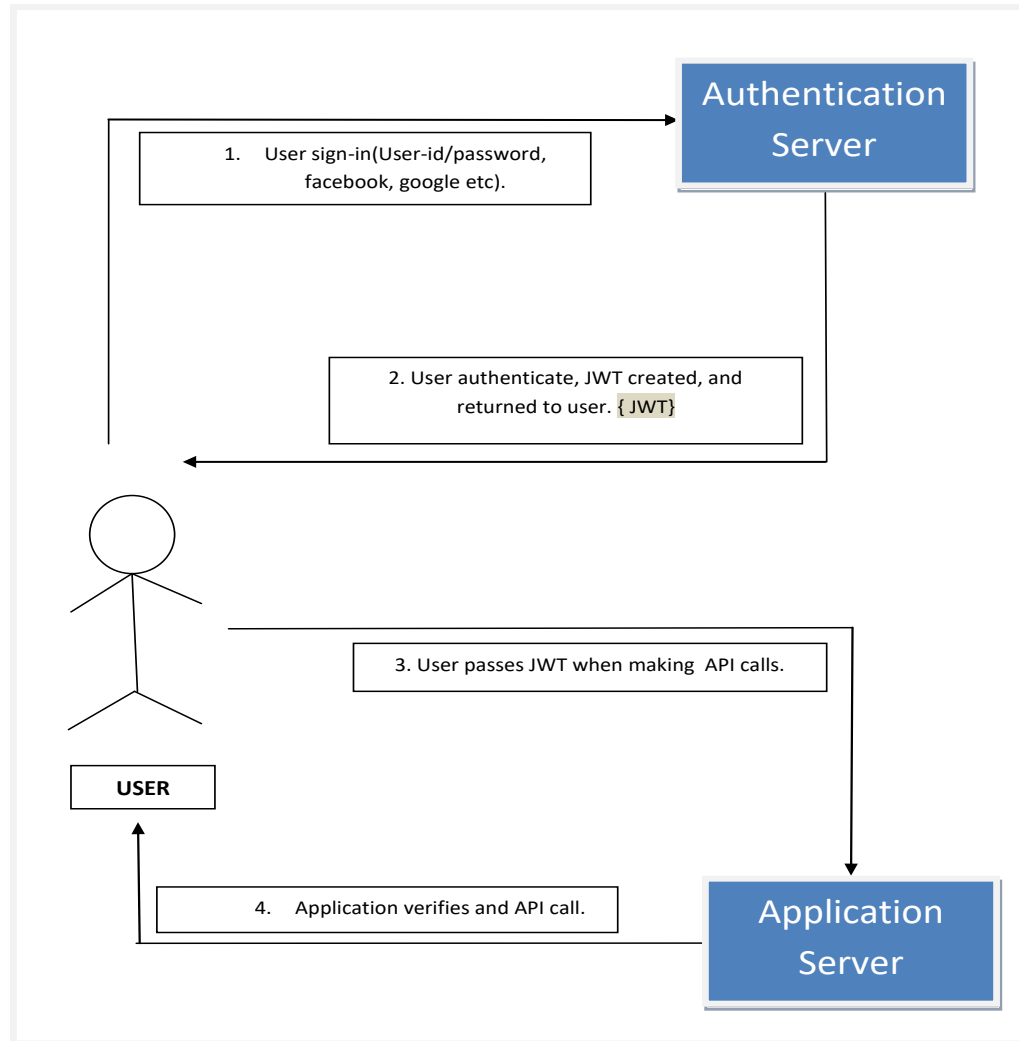
WORKFLOW



AUTHORIZATION SERVICE

- It has two mapping , one for authentication and another is for validation.
- The details of the user is passed to the authentication manager
- The user details service will load the data from the database.
- The JWT will next generate the token and then return it.

JWT WORKFLOW



AUTHORIZATION SERVICE

The screenshot shows a web browser window with the following elements:

- Browser Tabs:** Mail - P. Vijayalakshmi, Cognizant Unified Co..., Home - SumTotal, SumTotal, (7) WhatsApp, Login.
- Address Bar:** http://localhost:9096/login
- Page Header:** State Government Pension (with a piggy bank icon)
- Login Modal:**
 - Title:** Login
 - Username Field:** Username
 - Password Field:** Password
 - Login Button:** Login
- Error Message:** Site is Temporarily down. Try again later.
- Footer:** Copyright 2021
- Taskbar:** Windows taskbar with icons for Mail, Search, File Explorer, Chrome, and others. System tray shows date and time: 16:38:09, 08-07-2021.

PENSION DETAIL SERVICE

- When the rest end point of this MS is hit, the controller class accepts the requests & calls the methods in the service layer for further process.
- The class annotated with @Service is responsible for business logic, the methods in this layer performs some tasks & sends the response back to the controller.
- The method in the service layer takes the Aadhaar number as a parameter & reads the pensioner details from the CSV file & returns back the result in form of list.
- The method then checks for the Aadhar number in the list of Pensioner data, if the correct Aadhar number is found in hashMap then the method returns back the Pensioner details to the client or to any other microservices which sends the request.

PENSION DETAIL SERVICE

Pensioner Detail

http://localhost:9096/login

State Government Pension

Enter Pensioner Details

* - Mandatory Field

Name* Date of Birth*

Enter pensioner name dd-MM-yyyy

Permanent Account Number (PAN)*

Enter PAN number

Aadhaar Number*

Enter 16 digit Aadhaar number

Pension Type*

Self Pension

Calculate Pension

09:44:38
21-07-2021

PENSION PROCESS SERVICE

- It is autowired to pension detail microservice and pension disbursement microservice.
- It sends the aadhar number to pension detail microservice to get the pensioner details
- It validates the pensioner details in the service layer of pension process microservice
- After getting the type of pensioner as family or self it performs the required calculation in the service layer
- The calculated pension amount is negotiated for service charge and the result is returned to the pension disbursement

PENSION PROCESS SERVICE

(358) YouTube x AkshayGavandi/Pension-Manag... x Calculation Success x +

← → ↻ ⓘ http://localhost:9096/getPensionDetail?name=Page+Glasper&dateOfBirth=27-05-1970&panNumber=A123456789&aadhaarNumber=1234567891011120&typeOfPens... ☆ 🔧 🌐 ⋮

State Government Pension

Pension Details

Name: **Page Glasper**
DOB: **27-05-1970**
PAN Number: **A123456789**
Pension Type: **Family pension**
Pension Amount: **Rs. 6069.98**

Process Pension

Calculate Again

Copyright 2021

Pension-Managem....zip ^ Show all x

Windows taskbar icons: File Explorer, Edge, Chrome, Word, Excel, PowerPoint, Outlook, Teams, OneDrive, OneNote, Paint, Photos, Music, Videos, Settings, Task View, Search, Start, Power, Network, Volume, Bluetooth, Keyboard, Mouse, Touchpad, Display, Sound, Network, System, ENG, 21:04:32, 13-07-2021, 1



PENSION DISBURSEMENT SERVICE

- This pension disbursement microservice mainly calculates the service charge depending upon the bank type
- The service class is responsible for calculating the service charge of 500 or 550 depending on the bank type of pensioner
- The calculated service charge is then returned to the controller class for further process.
- The controller class is autowired with the pension disbursement service layer and pension detail client .
- The controller class requests the bank type of respective aadhaar number from pension detail client and returns the service charge.

PENSION DISBURSEMENT SERVICE

(358) YouTube x AkshayGavandi/Pension-Manag x Process Success x +

← → ↻ ⓘ http://localhost:9096/postProcessPension ☆ ⚙️ 👤 ⋮

 **State Government Pension** 


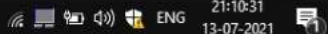
SUCCESS!
Pension Disbursement Success

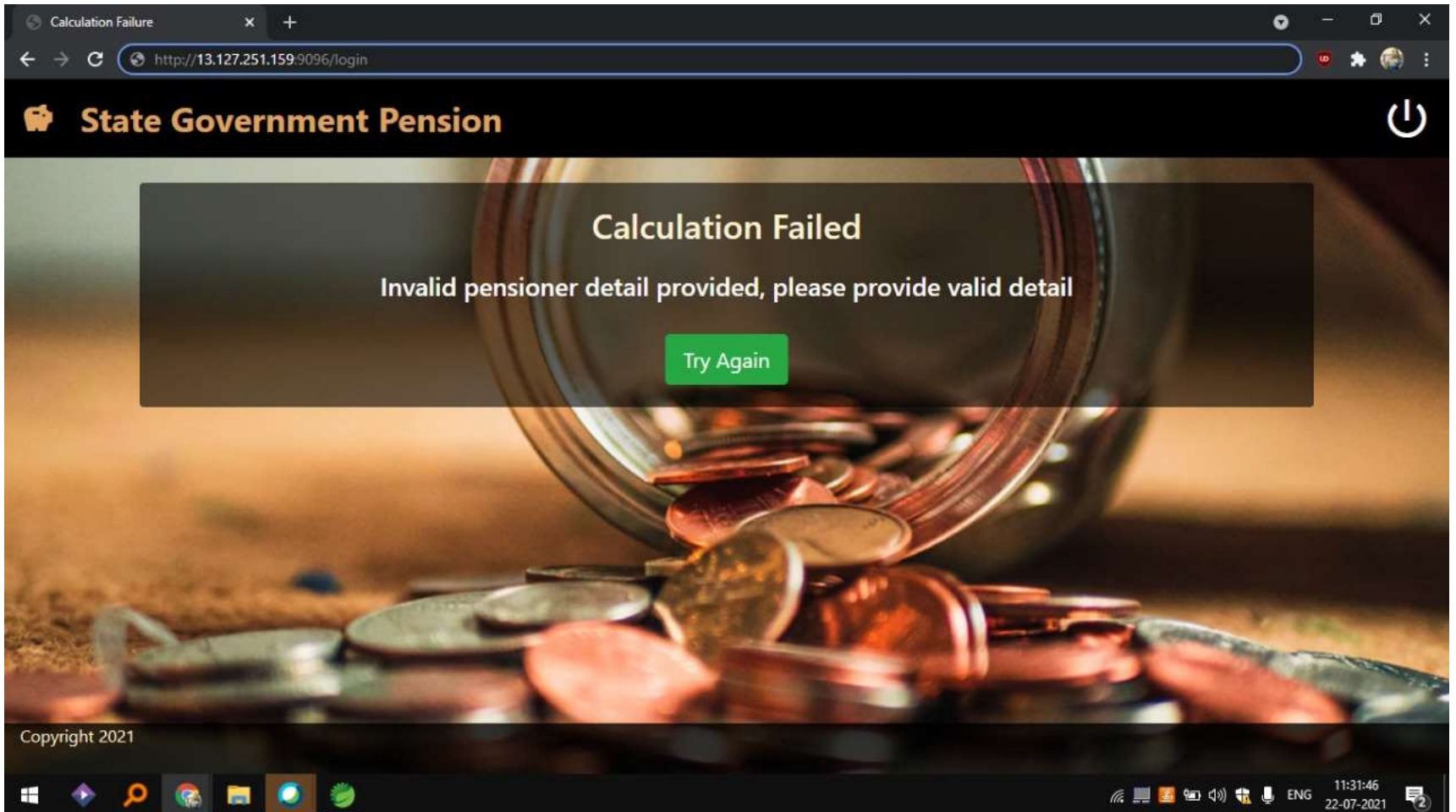
Pension Details

Name:	Page Glasper
Bank Name:	Bytecard
Account No.:	2626564583
Pension Type:	Family pension
Transaction Date:	13-07-2021
Transaction Time:	21:06:53 IST
Net Amount:	Rs. 5519.98

[Next Pension](#)

Copyright 2021

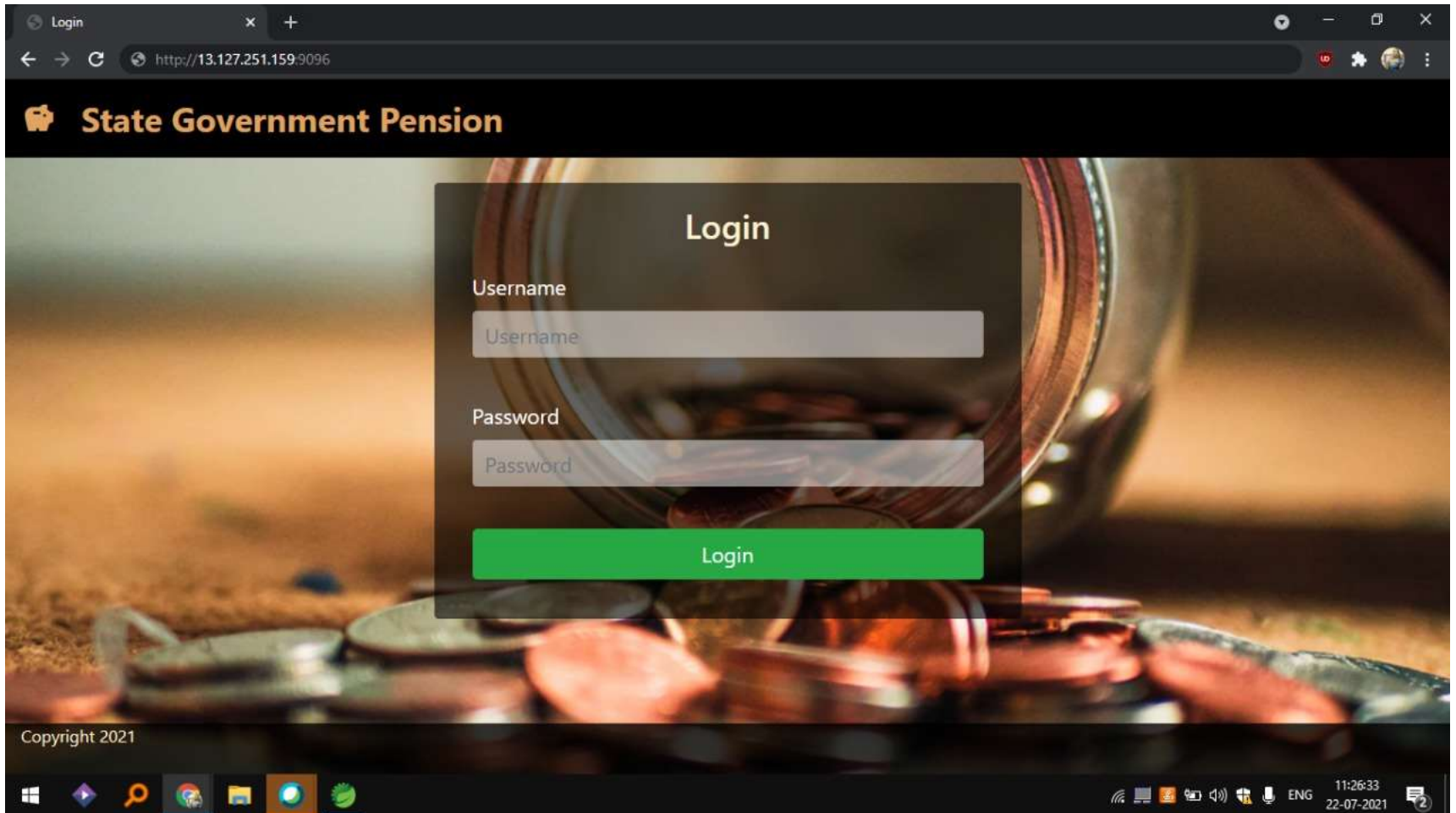
Windows taskbar:  21:10:31 13-07-2021 ENG 



PENSION MANAGEMENT SERVICE

- This is the client MVC application which allows members to login.
- On successful login it asks for pension details.
- Invokes the process pension microservice to get the details.
- Validates the data .
- Displays the processed pension details.
- Saves the pension details in the database.

CLOUD DEPLOYMENT IN LOCALHOST



Pensioner Detail

http://13.127.251.159:9096/login

Enter Pensioner Details * - Mandatory Field

Name* Date of Birth*

Page Glasper 27-05-1970

Permanent Account Number (PAN)*

A123456789

Aadhaar Number*

1234567891011120

Pension Type*

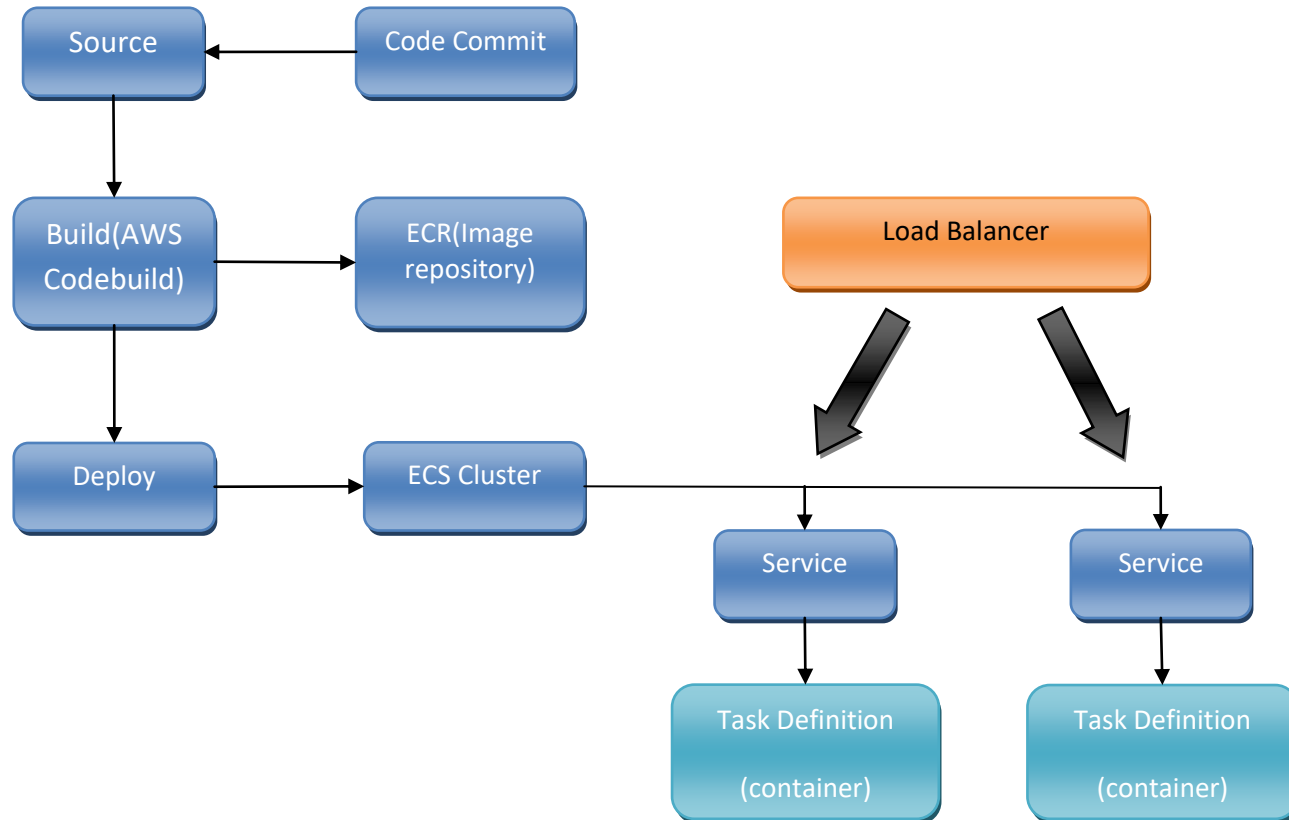
Family Pension

Calculate Pension

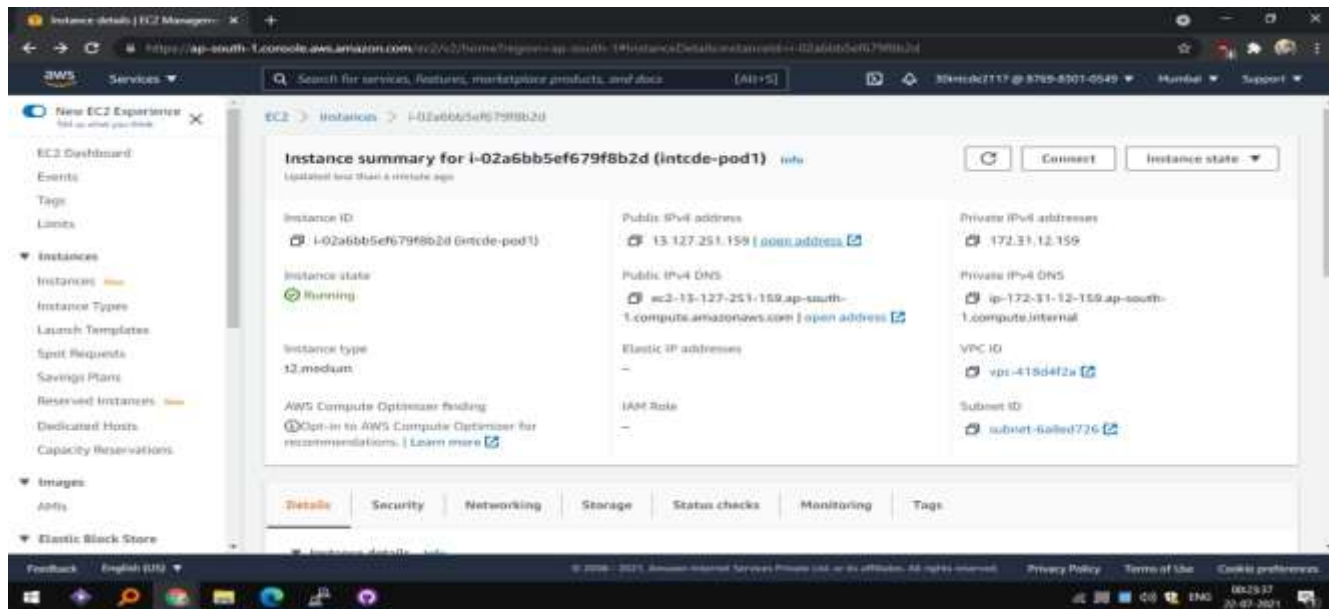
Copyright 2021

11:30:25
22-07-2021

AWS DEPLOYMENT



Docker Images and Instances



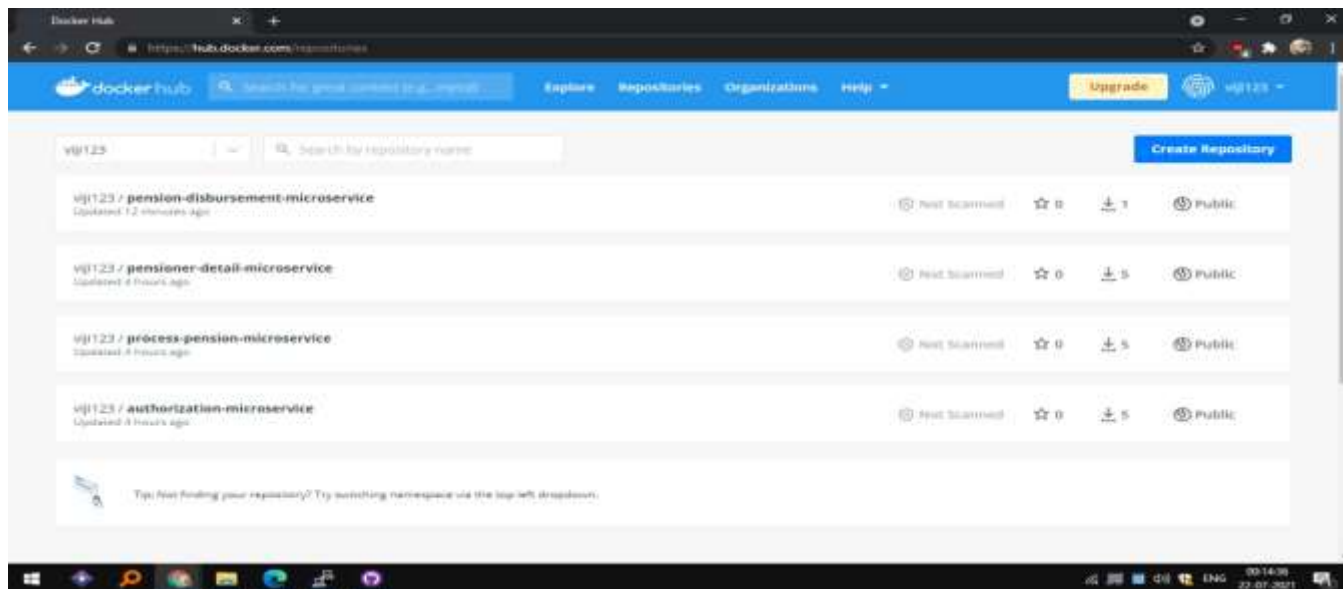
The screenshot shows the AWS Management Console interface for an EC2 instance. The left sidebar contains navigation links for EC2 Dashboard, Events, Tags, Limits, Instances, Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations, Images, AMIs, and Elastic Block Store. The main content area displays the 'Instance summary for i-02a6bb5ef679f8b2d (intcdc-pod1)'. The instance is in a 'Running' state. Key details include: Instance ID: i-02a6bb5ef679f8b2d, Public IPv4 address: 13.127.251.159, Private IPv4 addresses: 172.31.12.159, Public IPv4 DNS: ec2-13-127-251-159.ap-south-1.compute.amazonaws.com, Private IPv4 DNS: ip-172-31-12-159.ap-south-1.compute.internal, Instance type: t2.medium, VPC ID: vpc-415d4f2a, and Subnet ID: subnet-ba1ed776. Below the summary, there are tabs for Details, Security, Networking, Storage, Status checks, Monitoring, and Tags.

Instance ID	Public IPv4 address	Private IPv4 addresses
i-02a6bb5ef679f8b2d (intcdc-pod1)	13.127.251.159	172.31.12.159

Instance state	Public IPv4 DNS	Private IPv4 DNS
Running	ec2-13-127-251-159.ap-south-1.compute.amazonaws.com	ip-172-31-12-159.ap-south-1.compute.internal

Instance type	Elastic IP addresses	VPC ID
t2.medium	-	vpc-415d4f2a

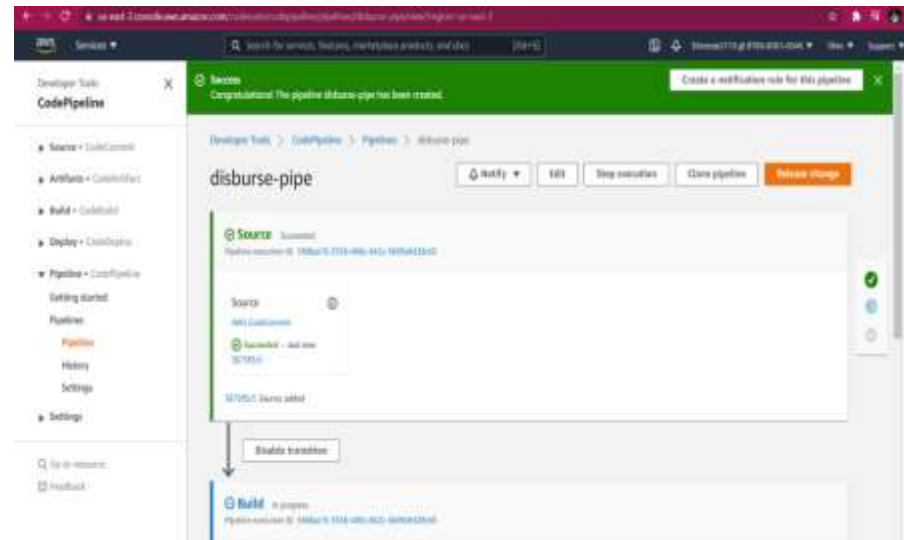
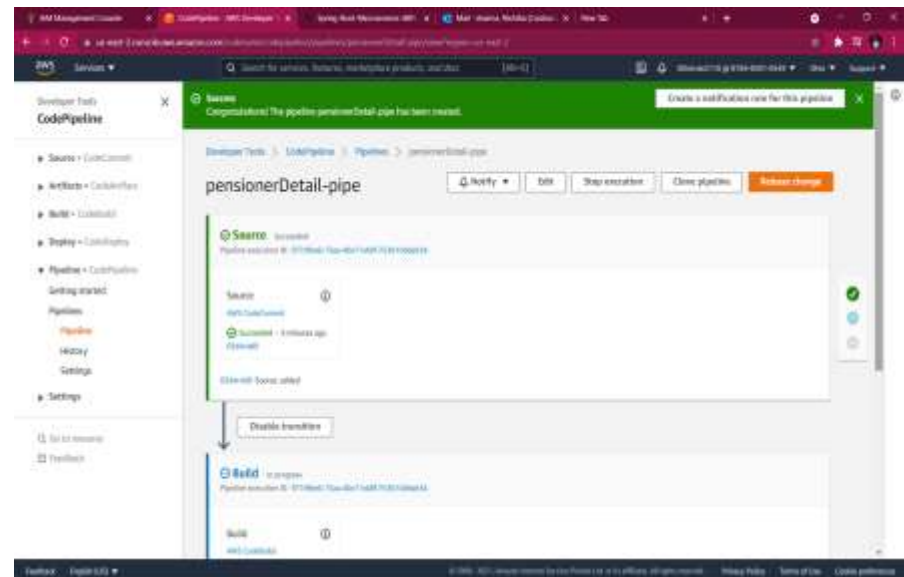
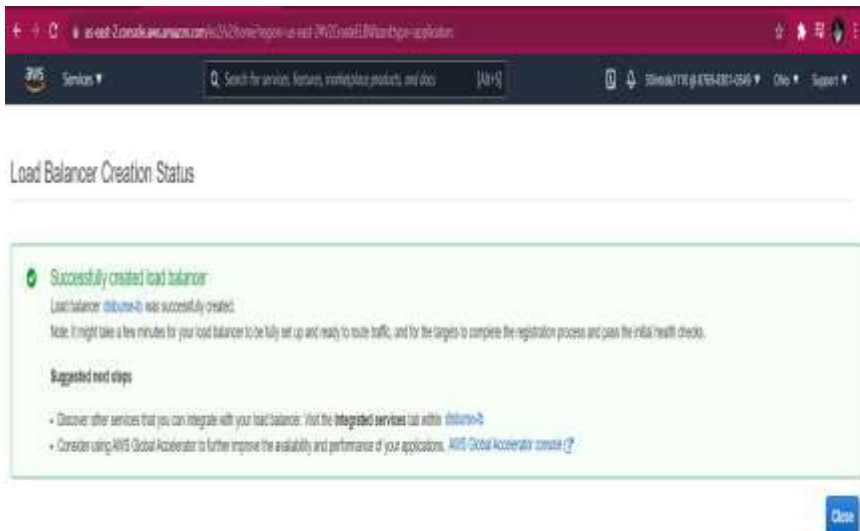
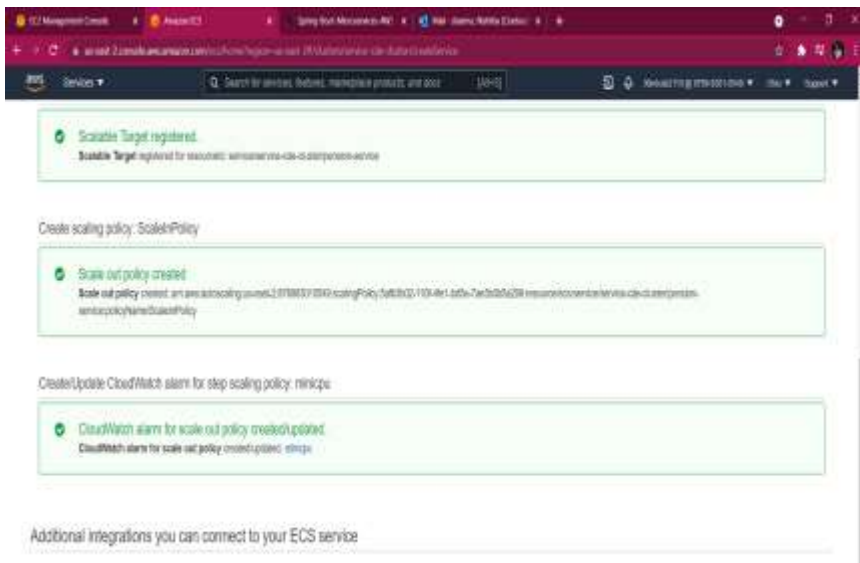
AWS Compute Optimizer finding	IAM Role	Subnet ID
Opt-in to AWS Compute Optimizer for recommendations. Learn more	-	subnet-ba1ed776



The screenshot shows the Docker Hub repository page for the user 'vji123'. The page lists four repositories: 'pension-disbursement-microservice', 'pensioner-detail-microservice', 'process-pension-microservice', and 'authorization-microservice'. Each repository is marked as 'Not Scanned', has 0 stars, and 5 downloads. The page also includes a search bar, a 'Create Repository' button, and a tip about switching namespaces.

Repository Name	Updated	Not Scanned	Stars	Downloads	Public
vji123 / pension-disbursement-microservice	Updated 12 minutes ago	Not Scanned	0	5	Public
vji123 / pensioner-detail-microservice	Updated 4 hours ago	Not Scanned	0	5	Public
vji123 / process-pension-microservice	Updated 4 hours ago	Not Scanned	0	5	Public
vji123 / authorization-microservice	Updated 4 hours ago	Not Scanned	0	5	Public

Load Balancer and Pipeline



CodePipeline - AWS Developer Tools

https://ap-south-1.console.aws.amazon.com/codesuite/codepipeline/pipelines/Pensionmanagement-auth/view?region=ap-south-1

Search for services, features, marketplace products, and docs [Alt+S]

Services

Developer Tools

CodePipeline

Source • CodeCommit

Artifacts • CodeArtifact

Build • CodeBuild

Deploy • CodeDeploy

Pipeline • CodePipeline

Getting started

Pipelines

Pipeline

History

Settings

Settings

Go to resource

Feedback

Success

Congratulations! The pipeline Pensionmanagement-auth has been created.

Create a notification rule for this pipeline

Developer Tools > CodePipeline > Pipelines > Pensionmanagement-auth

Pensionmanagement-auth

Notify Edit Stop execution Clone pipeline Release change

Source

In progress

Pipeline execution ID: c8f31107-f827-4c4b-8101-2daac381f093

Source

GetHub (Version 1)

In progress - 7 minutes from now

Disable transition

Build

Didn't Run

Feedback English (US)

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12:53:25 22-07-2021

CodePipeline - AWS Developer Tools

https://ap-south-1.console.aws.amazon.com/codesuite/codepipeline/pipelines/Pensionmanagement-auth/view?region=ap-south-1

Search for services, features, marketplace products, and docs [Alt+S]

Services

Developer Tools

CodePipeline

Source • CodeCommit

Artifacts • CodeArtifact

Build • CodeBuild

Deploy • CodeDeploy

Pipeline • CodePipeline

Getting started

Pipelines

Pipeline

History

Settings

Settings

Go to resource

Feedback

Success

Congratulations! The pipeline Pensionmanagement-auth has been created.

Create a notification rule for this pipeline

Success

Stage Build successfully retried

12848757 Source: Delete Pensiondisbursement directory

Disable transition

Build

In progress

Pipeline execution ID: c8f31107-f827-4c4b-8101-2daac381f093

Build

AWS CodeBuild

In progress - 7 minutes from now

Details

12848757 Source: Delete Pensiondisbursement directory

12:56:51 22-07-2021

THANKYOU