

The slide features a light blue background with decorative elements in the corners. The top-left corner has a cluster of pink, purple, and orange circles. The top-right corner has a purple circle, an orange circle, and a pink circle. The bottom-right corner has a pink circle, a blue circle, and a small purple circle.

Smart Salary

Team: Techno Spartan

Introduction

Smart Salary is a web application for an enterprise, where the employees can view their salary, department and reporting manager on a dashboard.

Managers can see employees reporting to them and their own information.

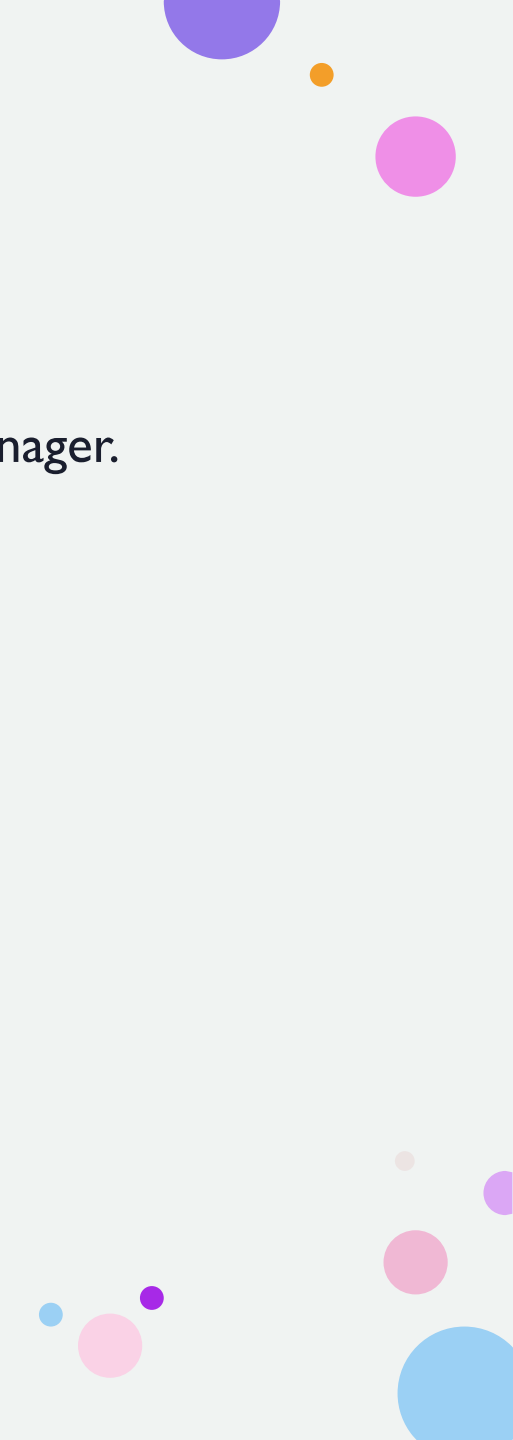
HR can update employee information and have access to HR department specific dashboard that provides insights into employee demographics based on gender, age and salary difference by age.

We have used the default project which has a large enterprise database. Our project majorly focuses on generating insights from the large employee data set using Databricks and Amazon Elastic Container Service which we have used for application deployment.

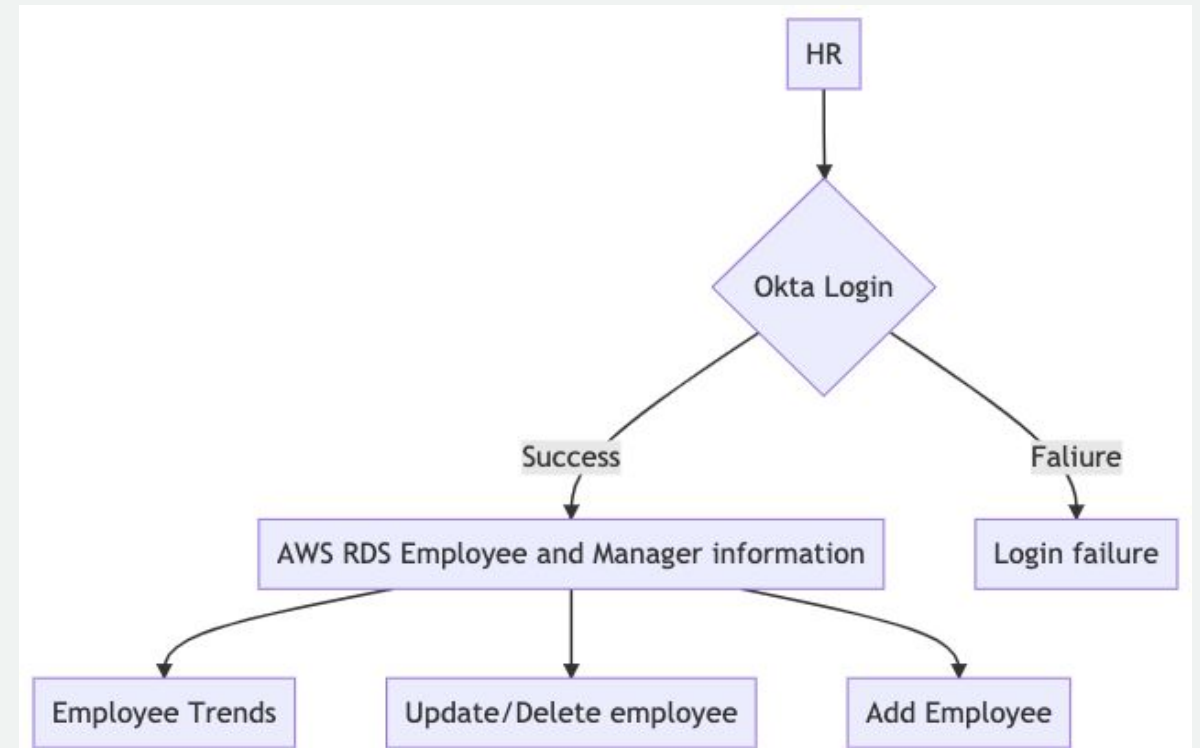
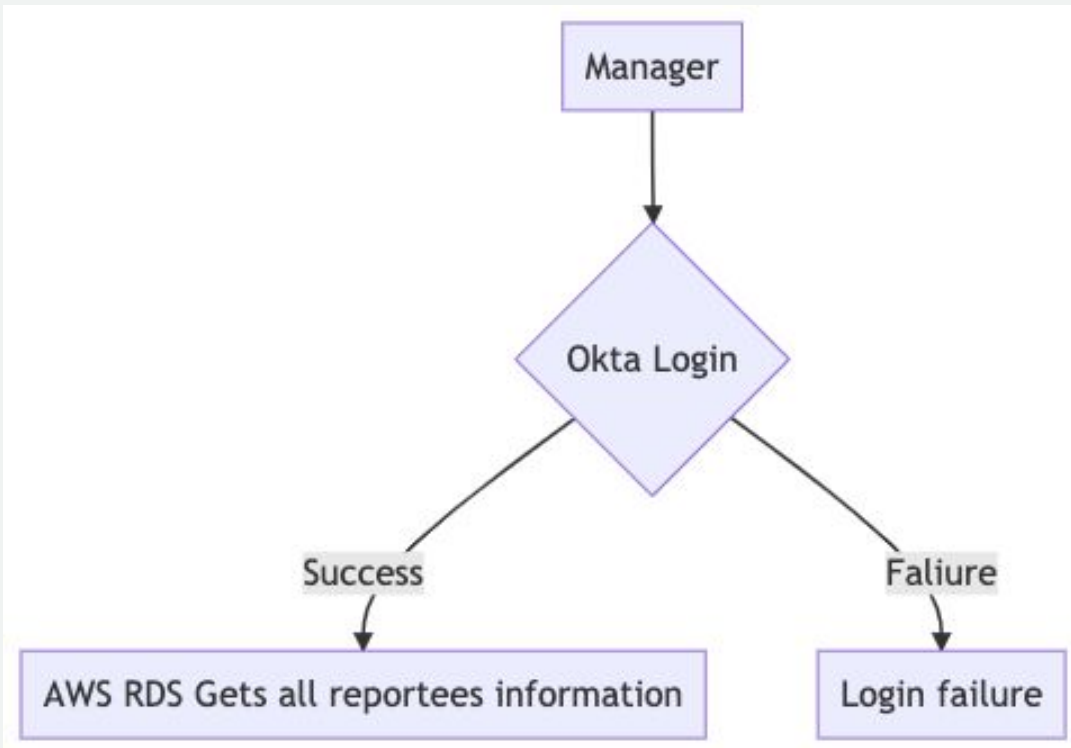
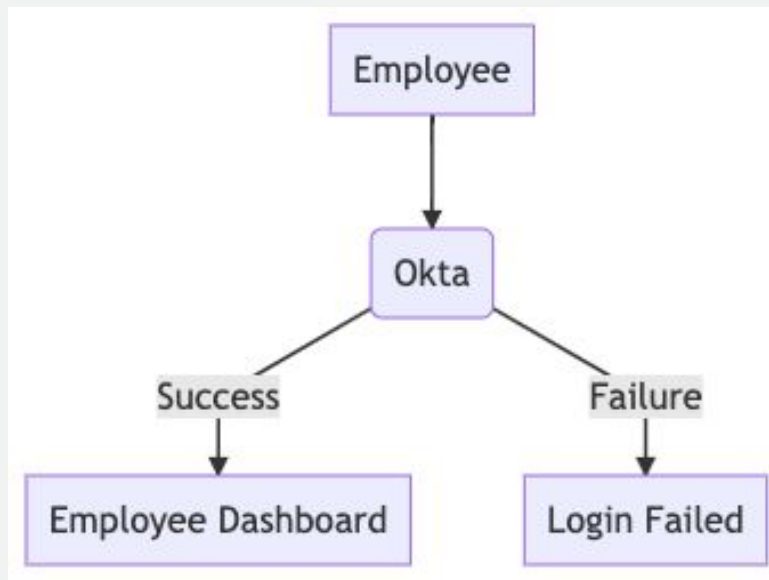


3 roles: Employee, Manager and HR.

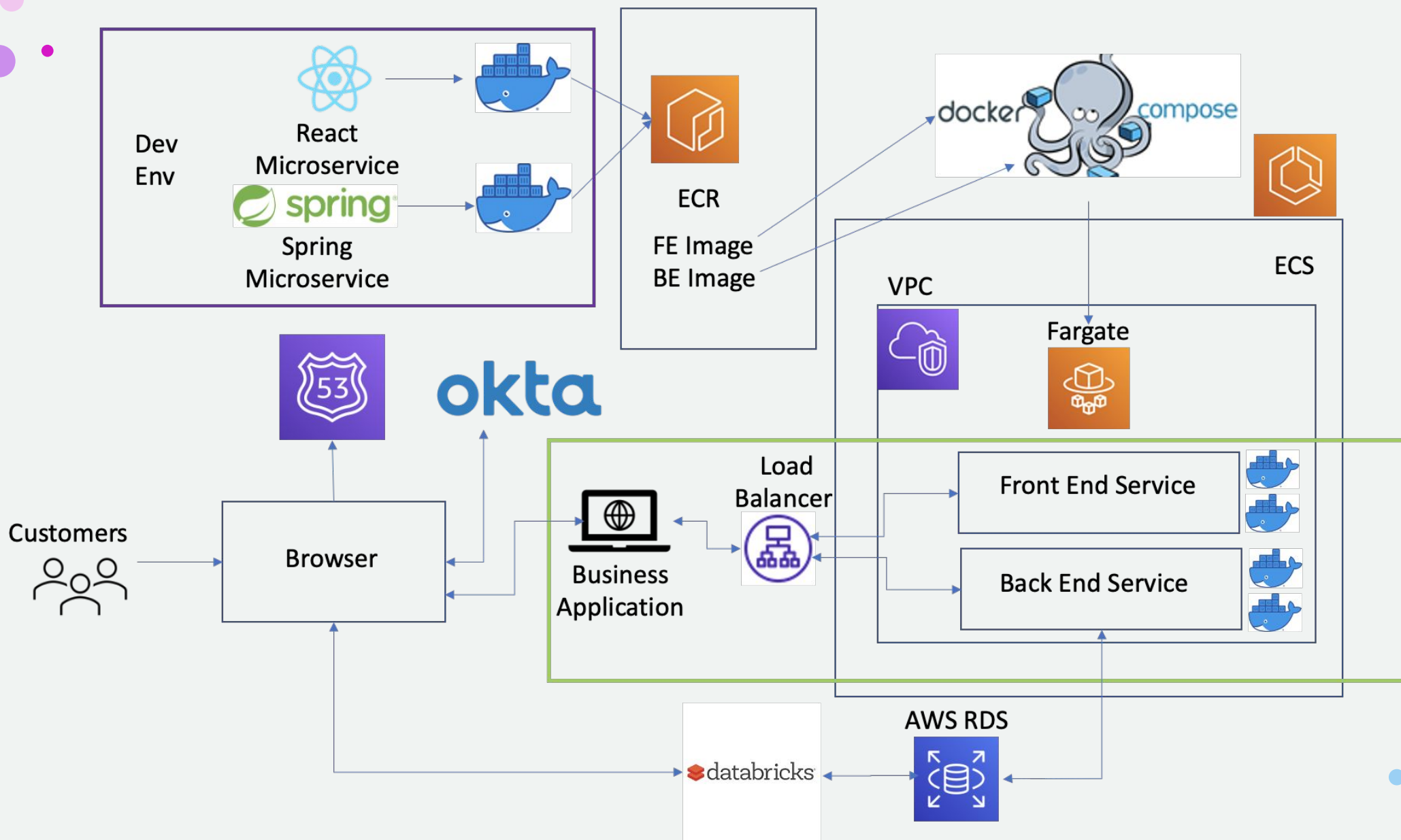
Our application has following features –

- Employee Dashboard – Employee information like name, salary, reporting manager.
 - Manager - List of employees reporting to manager
 - HR - List of Employees, perform actions like update/delete and can view visualizations generated from data analysis using databricks.
- 

Use Cases



Architecture Diagram



Tech Stack and Why this stack?

- o Okta SSO - Single Page Application
- o AWS RDS – MySQL
- o Databricks – Python, Pandas, Matplotlib (Community edition it's free to use)
- o Deployment
 - o Docker
 - o Docker Compose
 - o AWS ECS (Better isolation between services)
 - o AWS ECR (Made use of public repository which is almost free)
- We chose ECS fargate because the individual container services can be scaled independently.
- Last semester we made use of elastic beanstalk where we realized that the services' frontend and backend containers cannot be scaled independently.
- For students with limited network bandwidth, the ECR docker push is an expensive operation. Hope we can leverage the university network and bandwidth in the future for academic experiments.
- AWS compresses the images stored in ECR!!

```
~ docker images
REPOSITORY                                TAG      IMAGE ID      CREATED      SIZE
v1_frontend-ser                          latest   6faa70985b1c  24 hours ago  720MB
public.ecr.aws/x4y9x2u7/pavasjsuproj     frontend-latest 6faa70985b1c  24 hours ago  720MB
v1_backend-ser                          latest   324c3211144c  24 hours ago  912MB
public.ecr.aws/x4y9x2u7/pavasjsuproj     backend-latest  324c3211144c  24 hours ago  912MB
```

ECR > Repositories > pavasjsuproj

pavasjsuproj

[View public listing](#)

[View push commands](#)

[Edit](#)

Images (2)

<input type="checkbox"/>	Image tag	Pushed at	Size (MB)	Image URI	Digest
<input type="checkbox"/>	backend-latest	May 04, 2021 01:58:12 PM	591.24	Copy URI	sha256:6219df9db344d8...
<input type="checkbox"/>	frontend-latest	May 04, 2021 01:42:23 PM	218.04	Copy URI	sha256:a2621708b641e7...

AWS configurations and cost

The screenshot shows the AWS Management Console interface for the Amazon ECR repository 'pavasjsuproj'. The left sidebar contains navigation links for Amazon ECS, Clusters, Task definitions, Amazon EKS, Clusters, Amazon ECR, Repositories, Images, Gallery detail, Permissions, Tags, Registries, and Public gallery. The main content area displays the repository details, including a search bar for images and a table of image tags.

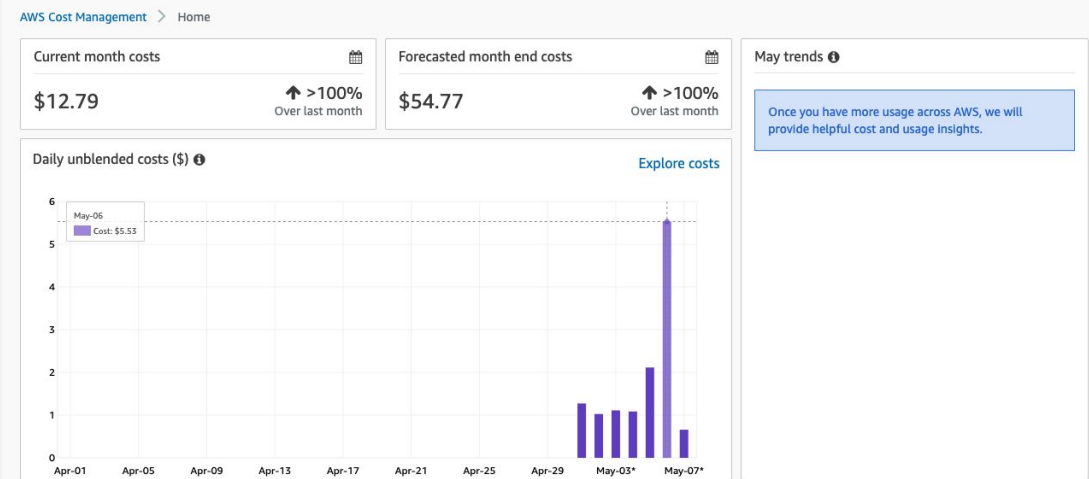
	Image tag	Pushed at	Size (MB)	Image URI	Digest
<input type="checkbox"/>	backend-latest	May 04, 2021 01:58:12 PM	591.24	Copy URI	sha256:6219df9...
<input type="checkbox"/>	frontend-latest	May 04, 2021 01:42:23 PM	218.04	Copy URI	sha256:a262170...

The screenshot shows the AWS CloudFormation console interface for a stack named 'v1'. The left sidebar contains navigation links for CloudFormation, Stacks, and v1. The main content area displays the stack details, including a search bar for stacks and a table of stack resources.

	Stack name	Creation time	Status
<input type="checkbox"/>	v1	2021-05-04 20:24:55 UTC-0700	CREATE_COMPLETE
<input type="checkbox"/>	aws-e43cyp2i-stack	2021-05-01 19:24:07 UTC-0700	UPDATE_COMPLETE

The screenshot shows the AWS Management Console interface for the Amazon ECS task definition details. The left sidebar contains navigation links for Services, Tasks, ECS Instances, Metrics, Scheduled Tasks, Tags, and Capacity Providers. The main content area displays the task definition details, including a search bar for task definitions and a table of task definition instances.

	Service Name	Status	Service type	Task D...	Desire...	Runni...	Launc...	Platfor...
<input type="checkbox"/>	v1-BackendService-c9FL1KSrJpyQ	ACTIVE	REPLICA	v1-back...	1	1	FARGA...	1.4.0
<input type="checkbox"/>	v1-FrontendService-7vZKA1occtsJ	ACTIVE	REPLICA	v1-front...	1	1	FARGA...	1.4.0



The image features a light gray background with several colorful circles of varying sizes in the corners. The top-left corner has pink, purple, and orange circles. The top-right corner has purple, pink, and orange circles. The bottom-right corner has pink, purple, and blue circles. The text "Thank You!!" is centered in a bold, dark blue font.

Thank You!!