Web Application Design and Deployment Plan for Moovin

1. Introduction

Moovin is a tech startup aiming to simplify rental property management by integrating real estate listings with repair services. To support this ambition, a robust and scalable web application is essential. This document outlines the best practices for designing, developing, and deploying a Django-based web application using PyCharm or Visual Studio Code, with deployment on Docker and AWS.

2. System Architecture Overview

The system architecture consists of the following layers:

- Frontend (HTML/CSS/JS with Django templates or React.js).

- Backend (Django Framework in Python).

- Database (PostgreSQL).

- REST API (Django REST Framework).

- Containerization (Docker).

- Cloud Infrastructure (AWS EC2, S3, RDS, and Elastic Beanstalk or ECS).

3. Development Tools and Environment

- Language: Python 3.x

- Web Framework: Django

- IDE: PyCharm or Visual Studio Code

- Version Control: Git + GitHub

- Package Manager: pip and pipenv

- Testing: Pytest, Django's TestCase

4. Key Features for Moovin Platform

- User Authentication and Role Management (Tenants, Landlords, Admins)

- Property Listings with Filters

- Booking System for Repairs

- Real-Time Repair Tracking

- Dashboard and Analytics for Real Estate Agents

- Secure Payment Integration

5. Deployment Plan with Docker and AWS

- Dockerize the application using Dockerfile and docker-compose.

- Use AWS EC2 or ECS for running containers.

- Store media/static files in AWS S3.

- Use AWS RDS for PostgreSQL database.

- Configure CI/CD pipeline with GitHub Actions.

- Ensure HTTPS with SSL (Let's Encrypt).

6. Security Considerations

- Use environment variables for credentials.

- Implement user permissions and access control.

- Sanitize user inputs and prevent XSS/CSRF.

- Enable HTTPS and secure cookies.

- Regular updates and dependency checks.

7. Conclusion

By following this comprehensive plan, Moovin can ensure the development of a scalable, secure, and efficient web platform to meet the growing needs of the rental and home services market in Western Australia and beyond.