Cloud-Based Development Environment Using GitHub Codespaces and AWS Services

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Introduction: Motivation & Goals

Motivation

Need for flexible, scalable coding environments

Goals

- Cloud-native code development
- Seamless collaboration
- Scalable infrastructure

AWS Services Used: Amazon EC2

Virtual Server Provisioning

On-demand computing capacity

Scalable Infrastructure

Flexible resource allocation

Secure & Reliable

High availability with security options

AWS Services Used: AWS Security Groups

Virtual Firewall Control

Configurable inbound/outbound rules

Enhanced Security

Protects EC2 instances from threats

Customizable Access

Granular traffic filtering

Steps Involved in Project

1

Identify Requirements

Gather functional and technical needs

2

Fork Template

Create project codebase copy

3

Launch Codespace

Start cloud development environment

4

Develop & Test

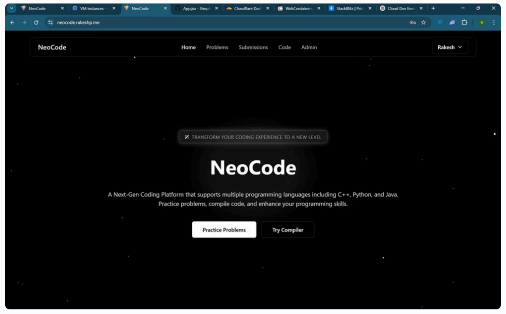
Code and debug in cloud

5

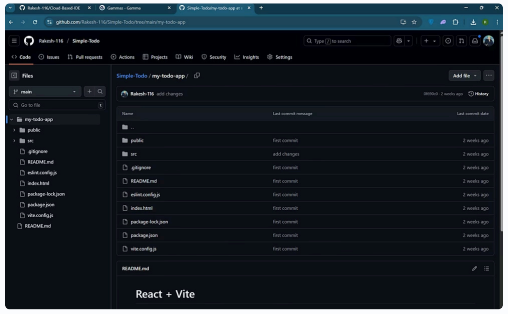
Deploy on EC2

Host application on AWS server

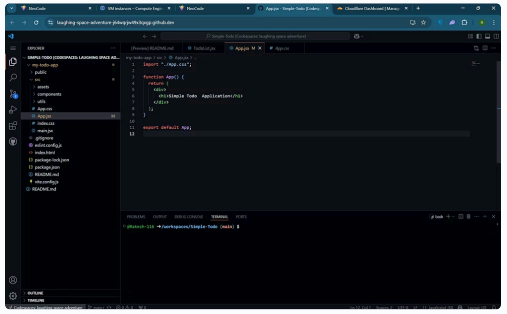
Stepwise Platform Screenshots & Workflow



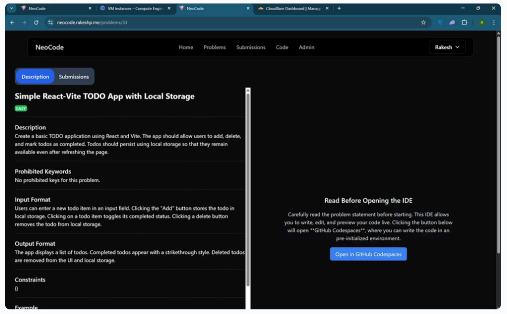
Homepage Interface



Forking Template



Launching Codespace



Code Development & Testing

Learning Outcomes

Cloud Development

Proficiency in browser-based IDEs

AWS EC2 Management

Deploying and securing cloud servers

GitHub Codespaces

Streamlined cloud code collaboration

Conclusion & References

Conclusion

- Scalable, browser-based development platform achieved
- Effective use of GitHub Codespaces and AWS EC2
- Enhanced real-time collaboration and security

References

- AWS Documentation
- GitHub Codespaces Guide
- Cloud Development Best Practices