

# DevOps Project : Resolution Tracker

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# Introduction

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## Context :

It's a common story: every year, people set New Year's resolutions with enthusiasm, only to abandon them after a few weeks. This project addresses that challenge with a solution designed to keep individuals motivated all year long. By creating an automated system that sends reminders and tracks progress, we aim to make sticking to resolutions easier and more consistent.

## Why DevOps?

DevOps was the ideal choice for this project because it emphasizes continuous improvement and automation. With tools like CI/CD pipelines, we ensure that notifications and progress tracking are deployed reliably and efficiently, while monitoring helps us maintain the system's overall performance.

## Objectives :

- Automate the process of monthly resolution reminders.
- Provide timely notifications and track weekly progress.
- Encourage engagement with daily motivation and tailored goal suggestions.

# Architecture and workflow

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## Architecture overview :

```
project/  
├── Jenkinsfile      # CI/CD pipeline configuration  
└── README.md        # Project documentation
```

## How it works :

- **Code Commit:** Developers push updates to the Git repository.
- **Build & Test:** A Jenkins pipeline validates the input and runs automated tests.
- **Deployment:** The notification and tracking system is automatically deployed.
- **Monitoring:** Logs and performance metrics are analyzed for improvements.

## Tools and technologies

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### Tools used :

- **SCM:** Git, GitHub
- **CI/CD:** Jenkins
- **Testing:** Unit tests and simulations for progress tracking
- **Deployment:** Automated scripts
- **Monitoring:** Jenkins logs and manual reviews

### Reasons :

- GitHub fosters collaboration and effective code management.
- Jenkins offers flexibility and robust pipelines for automation.
- Notifications play a critical role in keeping users engaged.

## CI/CD Pipeline

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### Pipeline main stages :

- **Build:** Compiles and packages the application.
- **Testing:** Validates date inputs, monthly resolution stages, and weekly check-ins.
- **Deployment:** Deploys notification scripts to the target environment.
- **Post-Deployment:** Logs and user feedback are reviewed for continuous improvements.

### Sample Jenkins Pipeline Code :

```

pipeline {
    agent any

    parameters {
        string(name: 'CURRENT_DATE', defaultValue: '', description: 'Enter the current date (YYYY-MM-DD)')
    }

    stages {
        stage('Date Validation') {
            steps {
                script {
                    def date = params.CURRENT_DATE
                    echo "Current Date: ${date}"

                    // Extract month and day from date
                    def (year, month, day) = date.split('-').collect { it.toInteger() }
                    echo "Processing notifications for Month ${month}, Day ${day}"
                }
            }
            ...
            // Remaining stages for each month are included in the full Jenkinsfile.
        }

        ...
    }

    post {
        success {
            echo "Resolution tracking completed for ${params.CURRENT_DATE}"
        }
        failure {
            echo "Failed to process notifications for ${params.CURRENT_DATE}"
        }
    }
}

```

## Demonstration

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### Steps Highlighted in the Demo :

- Committing code changes and running the Jenkins pipeline.
- Display CI/CD pipeline progress, including test results.
- Validating deployment and showing how notifications are delivered.
- Reviewing the final outcome, including progress reports and motivational messages.

### Example Outputs :

- **Daily Reminder:** e.g., "Write a journal entry today"
- **Weekly Progress Update:** e.g., "You've completed 75% of your monthly tasks"

# Conclusion

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## Key takeaways :

- DevOps practices streamlined the delivery of reminders and progress tracking.
- Automation enhanced efficiency and boosted user engagement.

## Looking ahead :

- Adding mobile app integration and compatibility with smart devices.
- Introducing gamification features like badges and leaderboards for added motivation.

# Appendices

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## Example Configurationfiles :

```
pipeline {
  agent any
  parameters {
    string(name: 'CURRENT_DATE', defaultValue: '', description: 'Enter the current date (YYYY-MM-DD)')
  }
  stages {
    ... // Full configuration here as shown in the provided Jenkinsfile.
  }
  post {
    success {
      echo "Resolution tracking completed for ${params.CURRENT_DATE}"
    }
    failure {
      echo "Failed to process notifications for ${params.CURRENT_DATE}"
    }
  }
}
```

**Links :** [https://github.com/Lucasrolo/Projet\\_DevOps/tree/main](https://github.com/Lucasrolo/Projet_DevOps/tree/main)