Title	GitHub Repository Automation and Health Management		
Type	Task Documentation	Date	07 May 2025

Purpose	This document systematically reports the tools and automation used by us to monitor and manage GitHub repository. It checks for stale branches, open pull requests, and security issues, while ensuring code quality and validation making it easier, faster, and more reliable.

GitHub Repository	Aparna2805/Project1

Task Team and Guide	Subramanian Lakshmi (Guide), Sajikumar Aparna, Priyadharshini Bharathi, Sahoo Divyaranjan

Task Overview

A. Build a reporting tool to give health status of a repository
Acceptance criteria
1.Identify stale branches more than 30 days with no commits
2. Identify open PRs for more than 7 days and list the reviewers with whom it is pending with
3. Email the report everyday

B. Build a git branch validator tool
Acceptance criteria for a valid feature branch:
1 Branch name should contain valid Jira ticket number
2. Branch name should follow pattern feature-<jira>-<short description>
3. Developers with commits to the branch should not have access to approve the PR

GitHub Repository Automation and Health Management

This system automates the identification of stale branches, open PRs, and reviewer tracking, while validating branch names with Jira ticket numbers and naming conventions, ensuring only eligible developers can approve pull requests.

Implementing the Deliverables -

A. **Health Status Reporting Tool**

Associated Files -

Tasks Executed (In order to acceptance criteria)

A.1   Identifying Stale Repo – Developed a python script that uses the GitHub API to

fetch branch details and commit timestamps, flags branches with no commits in the last 30 days, and includes them in the daily health report after validation.

A.2   <u>Identify open PRs for more than 7 days and list the reviewers with whom it is pending:</u> This script queries the GitHub API to retrieve open PRs, checks their creation date, and lists the pending reviewers for PRs older than 7 days for inclusion in the daily report.

A.2   <u>Email the report every day:</u> Scheduled a GitHub Action that triggers a Python script that compiles the stale branches and PR data, then sends an automated email with the repository's health status using an SMTP service.

        Outcome   Implemented stale branch identification, tracked open PRs, automated email reports, improved repository health through, and reduced manual effort in GitHub repository management.

B. <u>Git branch validator tool</u>

Files Created -

Tasks Executed (In order to acceptance criteria)

B.1   <u>Implemented Jira Ticket Validation</u>: Ensured branch names include a valid Jira ticket number, preventing inconsistent naming using regex pattern.

B.2   <u>Enforced Branch Naming Convention</u>: Checked that branch names follow the feature-<jira-ticket>-<short-description> pattern to standardize branch creation.

B.3   <u>Restricted PR Approval</u>: Prevented developers who committed to a branch from approving their own pull requests, ensuring unbiased reviews.

        Range   network diagram, Gantt chart, critical path, resource levelling.

2.4   Maintenance activity completion time is determined to meet requirements of customer and/or enterprise.

2.5   Production plan is produced and published.

        Range   manually, by computer program.

Outcome 3

Consult with affected parties for a planned aircraft maintenance activity.

Performance criteria

3.1   Parties who are affected by the production plan are identified.

        Range   production, support workshops, supply, technical services, quality control, customer.

3.2 Consultation with affected parties is carried out to obtain information needed to develop a production plan.

3.3 Consensus is obtained from affected parties for amendments to plan.

3.4 Final approval and/or agreement for the production plan is obtained from affected parties.

Outcome 4

Produce maintenance task documentation for a planned aircraft maintenance activity.

Range routine work, non-routine work, modifications, special inspections, component changes.

Performance criteria

Outcome 2

Produce a production plan for a planned aircraft maintenance activity.

Performance criteria

2.1 **Task requirements are determined in terms of resources, predecessors, and time to complete.**

2.2 **Resource constraints are identified in terms of quantity and availability.**

2.3 **Tasks are sequenced, using project management techniques to achieve required completion time.**

Range **network diagram, Gantt chart, critical path, resource levelling.**

2.4 **Maintenance activity completion time is determined to meet requirements of customer and/or enterprise.**

2.5 **Production plan is produced and published.**

Range **manually, by computer program.**

Outcome 3

Consult with affected parties for a planned aircraft maintenance activity.

Performance criteria

3.1 **Parties who are affected by the production plan are identified.**

Range **production, support workshops, supply, technical services, quality control, customer.**

3.2   Consultation with affected parties is carried out to obtain information needed to develop a production plan.

3.3   Consensus is obtained from affected parties for amendments to plan.

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Outcome 4

Produce maintenance task documentation for a planned aircraft maintenance activity.

Range   routine work, non-routine work, modifications, special inspections, component changes.

Performance criteria

4.1   Maintenance task documents are produced.

4.2   Maintenance task documents are issued and controlled.

Planned review date	31 December 2027

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	23 July 1997	31 December 2016
Revision	2	8 May 2001	31 December 2016
Review	3	19 May 2006	31 December 2016
Review	4	22 August 2014	31 December 2021
Review	5	26 March 2020	N/A
Rollover and Revision	6	26 April 2024	N/A

Consent and Moderation Requirements (CMR) reference	0028

This CMR can be accessed at http://www.nzqa.govt.nz/framework/search/index.do.

Comments on this unit standard

Please contact Ringa Hora Services Workforce Development Council qualifications@ringahora.nz if you wish to suggest changes to the content of this unit standard.