

## Sprint 2 Summary (Nov 4 – Nov 10)

### Objective

To complete **backend integration**, implement **analytics and alert modules**, enhance the **CI/CD pipeline** to five stages, and conduct comprehensive **end-to-end testing** leading to the final deployment and submission.

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### Date-wise Progress

#### November 4

- Conducted **Sprint 2 Planning** and created new user stories for analytics, alerts, and notifications.
  - Updated the **Jira board** with Sprint 2 backlog and assigned stories to team members.
  - Defined deliverables and integration milestones for the backend and analytics modules.
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#### November 5

- **Frontend & Analytics:**
    - Implemented **currency conversion** functionality within the portfolio dashboard (DAP-F-006).
    - Integrated **dynamic portfolio updates** to reflect real-time values in user dashboards.
    - Developed the **analytics engine** including ROI and asset allocation charts (DAP-F-011).
  - Feature branches created: `feature/dashboard-api` and `feature/analytics`.
  - Verified data flow between frontend and analytics services.
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#### November 6

- **Reports & Notifications:**
  - Implemented **Export Reports** module supporting **CSV** and **PDF** downloads (DAP-F-013).
  - Developed the **Alerts and Notifications** module (DAP-F-014, DAP-F-015) for email and threshold-based notifications.
  - Tested report export formats and ensured accurate data mapping for generated reports.
- Branches: `feature/reports` and `feature/alerts` successfully merged after internal testing.

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## November 7

- **Backend & Security Enhancements:**
    - Integrated **WebSocket support** for live portfolio value updates (DAP-F-010).
    - Conducted **security validation** using **AES-256 encryption** for data protection.
    - Verified **Two-Factor Authentication (2FA)** and session timeout mechanisms through QA tests.
  - Created security validation reports and confirmed encryption compliance.
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## November 8

- **CI/CD Pipeline Upgrade:**
    - Extended the CI/CD configuration to include **five stages** — **Build** → **Test** → **Coverage** → **Lint** → **Security**.
    - Added **linting** and **OWASP ZAP security scan** for automated vulnerability detection.
  - **Testing:**
    - Ran automated test suites across all components ensuring stability post-deployment.
    - Recorded improved build reliability and reduced manual testing overhead.
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## November 9

- Conducted **end-to-end testing (E2E)** covering all integrated modules:
    - UI → API → Analytics → Alerts.
    - Verified full workflow and real-time synchronization.
  - **Integration Testing:** Confirmed cross-module data flow accuracy.
  - Merged stable feature branches into **develop** after code reviews.
  - Generated the **Test Summary Report** documenting coverage and test results.
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## November 10

- Conducted **Sprint 2 Retrospective** focusing on performance, efficiency, and quality improvements.
- Updated documentation including **Traceability Matrix**, **Retrospective**, and **README.md** with CI/CD badges.

- Tagged the release as **v1.0-final** and merged the `develop` branch into `main`.
  - Prepared the project for **demo and final submission**.
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## Deliverables

- Fully functional **Digital Asset & Cryptocurrency Portfolio Tracker** with complete backend and analytics integration.
  - Implemented **alerts and notifications system** with CSV/PDF report exports.
  - Enhanced **5-stage CI/CD pipeline** (Build, Test, Coverage, Lint, Security).
  - Conducted **unit, integration, and end-to-end testing** with 75% code coverage.
  - Finalized **documentation, traceability matrix, and version tagging (v1.0-final)**.
  - Project ready for **presentation and deployment**.
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## Challenges & Learnings

- Addressed challenges with **WebSocket synchronization and data latency** during real-time updates.
- Enhanced expertise in **CI/CD automation, security integration, and multi-module testing**.
- Strengthened collaboration during merge and deployment phases, improving team efficiency.
- Gained deeper understanding of **analytics integration and alert management workflows** in production systems.