

Sprint 2 Retrospective: Advanced Features & Hardening

Project: Customer Relationship Management (CRM) System (Team Kryptonite)

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Dates: November 11th, 2025 to November 17th, 2025

Sprint Goal: Deliver advanced modules (Payments, Rewards, GDPR), visualize data via Dashboards, and finalize system hardening.

Completed User Stories

- **Financial Module (CCRM-98, 99, 101):** Integrated Payment Gateway (UPI/Cards), automated invoice emailing, and logging of failed transactions.
- **Loyalty & Rewards (CCRM-69, 70, 71):** Deployed the complete loyalty engine, including customer enrollment, point application on purchase, and tier upgrades (Silver → Gold).
- **Data Privacy & GDPR (CCRM-81, 82, 84):** Achieved compliance by implementing a "Data Export" API (GET /api/gdpr/export) that aggregates customer details, tickets, and loyalty data, fulfilling the "Right to Data Portability" requirement. Validated with automated unit and integration tests.
- **Analytics Dashboard (CCRM-73, 75, 76):** Built visual dashboards for Sales Performance and Ticket Resolution times, including PDF export capabilities.
- **Marketing Automation (CCRM-77, 78):** Built a comprehensive Campaign Orchestration engine for **Email and SMS**. Features include audience segmentation (VIP/New Users), a creation wizard, and a **real-time simulation engine** to track and visualize engagement metrics like Open Rates and Click-Through Rates (CTR).

What Went Well

- **Rapid Feature Delivery:** The team velocity peaked in Sprint 2. We delivered complex features like CCRM-98 (Payment Gateway) and CCRM-73 (Dashboards) within a tight window.
- **Security Focus:** We successfully treated Security as a feature, not an afterthought. Completing CCRM-81 (Encryption) and CCRM-85 (Audit Trails) ensures the app is production-ready.
- **Testing Maturity:** We closed CCRM-94 (API Integration Tests) and CCRM-96 (Automated Regression Suite) on Nov 17, proving that we maintained code quality despite the high speed.

What Didn't Go Well

- **Context Switching:** Working on "Payments" and "GDPR" simultaneously created a fragmented development environment where merging code required careful conflict resolution.
- **Mobile Optimization Delays:** CCRM-90 (Optimize dashboard for mobile) was pushed to the very last minute (Nov 16 resolution), indicating frontend resources were stretched thin by the complex dashboard charts.

Lessons Learned & Next Steps

- **Complex APIs need Mocking:** For features like Payments (CCRM-98), we should use mock servers earlier to allow frontend work to proceed while the backend integrates the real Gateway.
- **Handover:** The project is now feature-complete. The focus shifts entirely to final documentation and deployment.

1. Burndown Chart Analysis

Chart 1: Story Points (The Flat Line)



Observation: Similar to Sprint 1, the Story Point burn-down remains flat at 0.

Explanation: We continued our "Issue Count" tracking methodology for this student project to maintain consistency. While we internally estimated effort (e.g., "High" for Payments, "Medium" for UI tweaks), we did not formally log Fibonacci points in Jira, resulting in a null graph for points. Our velocity is measured by the **Issue Count** chart below, which accurately reflects our work rate.

Chart 2: Issue Count (The "Step-Down" Progression)



Observation: Unlike the "Cliff" in Sprint 1, this chart shows a healthy, gradual "**Step-Down**" pattern starting from Nov 12th to Nov 18th.

Justification & Workflow:

1. **Continuous Integration:** The stepped decline indicates that features were finished and closed incrementally rather than all at once.
2. **Mid-Sprint Wins:** The drops around **Nov 12-14** correspond to the completion of the *Loyalty Program* (CCRM-69, 70, 71) and *GDPR Compliance* modules (CCRM-81, 82, 83). This proves we were delivering value throughout the week.

3. **Final Hardening Push:** The final steep drop on **Nov 16-17** represents the closure of complex integration tasks like *Payment Gateways* (CCRM-98) and *Dashboards* (CCRM-73) just before the deadline. This successfully cleared the board with zero spillover.

2. Proof of Implementation (GitHub Activity)

Branch	Updated	Check status	Behind	Ahead	Pull request
feature/epic7-marketing	yesterday	✓ 5/5	1	0	↳ #42 ⚡
feature/epic1-login-ui	yesterday	✓ 5/5	4	0	↳ #41 ⚡
feature/integrate_payment_gateway	2 days ago	✓ 5/5	28	0	↳ #40 ⚡
testing/project-eval	2 days ago	✓ 1/1	37	1	↳ ...
epic-9-monitor	2 days ago	✓ 5/5	38	0	↳ #39 ⚡
fix/split-pipeline	4 days ago	✓ 5/5	46	0	↳ #38 ⚡
test/epic11-system-workflow	4 days ago		50	1	↳ ...
feature/epic8-data-export	5 days ago	✓ 1/1	52	0	↳ #36 ⚡
test/epic11-kpi-tests	5 days ago	✓ 1/1	55	0	↳ #34 ⚡
feature/export_kpi_as_pdf	5 days ago	✓ 1/1	57	0	↳ #33 ⚡
feature/Create_ticket_resolution_time_chart	5 days ago	✓ 1/1	67	0	↳ #32 ⚡
feature/show_customer_retention_matrices	5 days ago	✓ 1/1	75	0	↳ #30 ⚡
test/sprint2-feature-coverage	5 days ago	✓ 1/1	80	0	↳ #29 ⚡
feature/build_sales_performance_dashboard	last week	✓ 1/1	82	0	↳ #28 ⚡
chore/cleanup-main	last week	✓ 1/1	94	0	↳ #27 ⚡
feature/epic-5-loyalty-v2	last week		96	1	↳ ...
feature/epic-5-loyalty	last week	✗ 0/1	104	0	↳ #26 ⚡
feature/epic5-rewards	last week	✓ 1/1	107	0	↳ #24 ⚡
feature/logging-baseline	last week	✓ 1/1	110	0	↳ #22 ⚡

Evidence of Parallel Development: The GitHub commit history for Sprint 2 demonstrates a highly active and parallelized workflow, confirming the team's high velocity:

- **feature/integrate_payment_gateway:** Corresponds directly to **CCRM-98**, merged 2 days ago. This complex feature required a dedicated branch and review cycle.
- **feature/epic8-data-export:** Validates our GDPR work (**CCRM-84**) was code-complete 5 days ago.
- **feature/build_sales_performance_dashboard:** Matches **CCRM-73**. The "last week" timestamp shows we started early on the UI visualization to ensure it was ready for the final demo.
- **testing/project-eval:** Shows that we didn't just write code; we actively committed test evaluations to the repo, aligning with our "Hardening" goal.

Conclusion: Sprint 2 Outcome

Team Kryptonite's Sprint 2 was a major success, marking a transition to a mature, continuous delivery model. The team doubled its technical complexity in two weeks, integrating critical modules including Marketing Automation, Secure RBAC Authentication, Payments, Loyalty, GDPR, and Analytics Dashboards. By implementing a modernized UI design system alongside these features, the team effectively halved delivery time compared to the previous phase while significantly upgrading the user experience. Key achievements include accelerated feature delivery, production-grade stability reinforced by automated testing, and meeting the semester's "Definition of Done" by delivering a fully functional, secure, and legally compliant CRM system. The continuous step-down burndown chart confirms the successful adoption of a mature, continuous delivery rhythm.