Module 2 Assignment

Product Requirements Document

Stephanie Neil

CIDM 6325 Web App Development

Information

- Product Name: Training Tracker App
- Author: Stephanie Neil
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Overview

- Summary:

The Department of Defense (DoD) employs nearly 3 million personnel who complete mandatory training annually, but fragmented systems and inconsistent tracking methods result in widespread non-compliance. Recent audits resulted in deficiencies as high as 100% in some units. This creates significant risks to certification, readiness, and operational efficiency. A centralized staff training tracker application would streamline verification of both online and in-person training, reduce administrative burden, and ensure compliance across the DoD. Overall the main problem was seen when volunteering with the DoD, but in reality for this course this will be a training tracker app that any business can use.

- Vision:

Enable any business to centrally track, manage, and validate mandatory training for its employees, reducing audit discrepancies, ensuring compliance, and improving operational readiness.

- Goals:
    1. Create a unified platform for tracking and reporting training completion.
    2. Reduce audit discrepancies tied to incomplete/fragmented training records.
    3. Improve accountability and readiness across the workforce.
    4. Deliver an intuitive user experience for both employees and administrators.

Context & Background

- Market Insights:
    1. Large user base with high stakes
        - Business range in many sizes of employees. If looking specifically at the DoD, they have nearly 3 million employees.
        - Even small improvements in efficiency or compliance rates would lead to significant time and cost savings.
    2. High compliance burden
        - Civilian employees in the DoD alone must meet 16 annual training requirements.

- This creates a strong need for automation and centralized tracking to reduce administrative workload.
    3. Fragmented systems create demand for integration
        - Current tracking in the DoD relies on multiple, uncoordinated systems that lead to inefficiencies, duplication, and inconsistent reporting.
        - A solution offering system integration and centralized dashboards will directly address this issue.
    4. Audit discrepancies show urgency
        - Training deficiencies are a recurring finding in audits, with some units showing 60-100% non-compliance.
        - This proves a centralized solution is not just a convenience, but a necessity to avoid penalties and operational disruptions.
    5. Operational risks for non-compliance
        - Departments risk losing certification status and temporary shutdowns, which directly impacts mission readiness.
        - Non-compliance also correlates with reduced employee performance and higher error rates.
    6. Administrative inefficiency
        - Current processes waste substantial man hours annually due to manual verification and fragmented record-keeping.
        - A unified system could significantly reduce administrative burden and free staff for higher-value work.
    7. Gap in tracking in-person training
        - Unlike online modules, in-person training lacks reliable verification methods, leaving a gap in compliance reporting.
        - A system that captures and consolidates both online and in-person training would fill a critical gap.
    8. Budget and staffing constraints create pressure for automation
        - Hiring freezes, delayed hiring, and overworked staff mean DoD agencies have fewer resources to manage compliance manually.
        - This increases the market need for automated tracking tools that reduce reliance on administrative staff.
- Business Context:
  Objectives & Key Results (OKRs)
    1. Objective: Ensure DoD-wide compliance with training requirements.
        - 90% on-time completion rate of all annual training requirements.
        - 50% fewer audit findings related to incomplete training within the first year of deployment.
        - At least 80% of civilian and military personnel will be actively using the tracker within the first year.

Scope

- In-Scope Features:
    - Centralized training requirement catalog
    - Employee training dashboard (status, deadlines, completion history)
    - Automated reminders/notifications for expiring/overdue training
    - Manager/administrator portal with reporting and compliance analytics
    - Audit-ready reports with dated proof of training completions
    - Mobile accessibility for ease of logging and validating in-person training
- Out-of-Scope
    1. Custom non-mandatory training programs
    2. Development of new training content

User Stories & Use Cases

- Primary user persona:
    1. Employee who needs to complete annual required training
    2. Manager who needs to track employee's readiness
    3. Auditor who needs to easily access proof of training completion within another department
- User Stories:
    1. Robbin is a civilian employee for the DoD. She has required training that is part of MCCS, the department within the DoD that she works for, and she has required training for other departments that she performs her audits on. She wants her own required training to be easy to track and review so she remains compliant. As an auditor, she also wants to save time by easily being able to access proof of training completion for other departments within the DoD system.
    2. Suki is another civilian employee who is currently out of compliance on her required training. She desires automated reminders before training completion deadlines to help her stay within compliance.
    3. Chris is their manager. He wants to track his team's training progress so he can ensure their readiness. He also wants an easy way to find their information on a manager's dashboard.
- Use Cases Scenarios:
    1. Civilian or Miliary Employee
        - Must complete 16 annual required trainings. Some are online, some are in-person. In the past this employee forgot about their sexual assault training, which takes place in-person, and this was flagged when their department was audited.
        - With the Training Tracker app they log in with their strong password. Their dashboard shows all training requirements with status

indicators (green = complete, yellow = due within 30 days, red = overdue). For in-person training, the instructor uploads the attendance record and attendees receive confirmation. They get automated emails reminding them of upcoming training.
- With the Training Tracker app they can stay compliant, avoid missing deadlines, and no longer have to keep their own tedious spreadsheet logging their trainings.

2. Manager
- Responsible for 150 personnel who all need to stay current on annual mandatory training. Before the app, their admin staff tracked compliance manually using Excel spreadsheets. During the last audit, their unit had 40% non-compliance, causing reputational damage and additional oversight.
- With the Training Tracker app, they access the manager portal to view a real-time compliance dashboard. They can filter by unit, training type, or time frame. They receive automated monthly compliance summaries highlighting employees with training due for the month. Reminders are sent to staff to reinforce the importance of them completing their training requirements on time.
- They can quickly identify gaps, ensure accountability, and receive audits confident that their unit meets training compliance requirements. Administrative workload is reduced by hundreds of hours per year.

3. Auditor
- Conducts certification audits. In the past, training records were scattered across multiple systems, requiring cross-checking and follow-up emails.
- With the Training Tracker app, they log in with audit-level access. They download time-stamped reports for any department. Can get into any individual employee record to confirm training completions, if needed. Review both online and in-person training verifications in a single system.
- Audits are now completed in a fraction of the time, with reliable, consolidated data. Reports are consistent and discrepancies are reduced.

4. Edge Case – Network outage during training upload
- Situation: An instructor finishes an in-person training session and tries to upload the attendance sheet into the app. The DoD base has a temporary network outage.
- Problem: The upload only records 60% of attendees. Employees who attended are later flagged as overdue status for the training. The instructor does not realize the upload failed.
- Mitigation: The app detects incomplete uploads and alerts the instructor. A retry mechanism auto-uploads once the network is

restored. Employees receive confirmation once the record is fully validated in the system.

5. Edge Case – Employee transfers between departments
    - Situation: Previous training records are tied to old department's system.
    - Problem: New supervisor cannot see his past completed training. The employee is incorrectly flagged as overdue for all mandatory training, although many he completed and are valid within his new department.
    - Mitigation: The app uses a centralized employee ID that is the same across departments. Training records automatically follow the employee. The supervisor can see an accurate and up to date training record.

Functional Requirements

- Must-Have
    1. Centralized training record storage.
    2. Real-time sync with LMS systems.
    3. Automated reminders for upcoming/overdue training.
    4. Exportable audit reports (PDF/Excel).
    5. Secure login with strong password (12-15 characters including letters, numbers, and symbols).
- Should-Have
    1. Mobile accessibility (responsive web app).
    2. Customizable admin dashboards.
    3. Bulk upload of training records.
- Nice-to-Have
    1. Flag high-risk units for training non-compliance.
    2. Role-based personalized dashboards.

Non-Functional Requirements

- Performance: Support 3 million users with less than 2 second page load time.
- Scalability: Cloud-based, built-in modules that can be updated and changed independently, more servers are available for peak use times.
- Accessibility: WCAG 2.2 AA compliance of color contrast, audio accessibility via keyboard for reading page content.
- Security: Authorization and Authentication, encrypted data, PII protected (employee ID number and name is all that is needed on app), follows NIST and RMF standards.
- Reliability/Availability: during peak use the dashboard loads basic compliance data, monthly downtime of 3 hours for maintenance

Dependencies and Risks

- Technical Dependencies
     1. Learning Management System (LMS)
     2. Personnel databases (I will create a fake list of personnel data to use)
     3. Identity management system
     4. Cloud infrastructure
- Third-Party Integrations
     o LMS platforms. For this project I will not have access to DoD LMS systems, so I will use a free LMS system available through Moodle as an example.

          ▪ https://docs.moodle.org/500/en/Git_for_Administrators

     o Secure messaging/email systems for reminders.
- Risks & Mitigation

Risks	Mitigation
Resistance to adoption	Stakeholder training, phased rollout, leadership endorsement
Data fragmentation across systems	Data reconciliation process
Security vulnerabilities	Penetration testing, zero-trust architecture
System downtime during audits	Redundant infrastructure, Service Level Agreement for 99.9% uptime

Acceptance Criteria

- Testing & Validation
     1. Unit Testing: Verify individual modules (login, reporting, notifications).
     2. Integration Testing: Ensure data flows correctly between LMS and app.
     3. User acceptance testing: validate workflows in sandbox.
     4. Audit Simulation: Generate reports for sample audits to ensure accuracy and completeness.
     5. Security testing: vulnerability scans.

Success Metrics

Key Performance Indicators (KPIs)
     ▪ Training completion rate: 90% of employees completing all required training annually.
     ▪ Audit discrepancies: 50% fewer audit findings related to incomplete training within the first year of deployment.

- System adoption: At least 80% of DoD units actively using the app within 6–12 months.
- User satisfaction: Employee/admin satisfaction score ≥ 80%.
- Administrative efficiency: Reduction in hours spent on manual training record reconciliation.

Rollout Plan

1. Develop prototype
   - Features: login, employee dashboard with list of required training, manager dashboard
   - Small scale API integration with Moodle example
   - Test with a pilot group

References

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