

Capstone Weekly Status Report 11

Date and Time: November 16, 2025

Student Name: Satwik Alla

Capstone Project: SBOM Manager - Software Bill of Materials Management System

Capstone Sponsor: Software Engineering Department **Ethical Software Lab** – In-house project

Capstone Advisor: Prof. Mohammad Samarah & Prof. Melissa Sahl

Status Details:

Work accomplished this Week

SBOM Comparison Feature Enhancement

- Side-by-side comparison: Compare 2-3 applications simultaneously with split-view interface
- Component diffing algorithm: Automatically detect added, removed, and modified components
- License change detection: Color-coded indicators (green for safety, yellow for warning, red for risk)
- Similarity scoring: Calculate and display percentage match between SBOMs
- Visual indicators: Easy-to-read difference highlighting with component count summary
- Export comparison: Generate PDF reports of comparison results

Testing & Quality Assurance

- End-to-end testing of all features (upload → generate → view → compare → export)
- Cross-browser testing on Chrome, Firefox, Safari, and Edge
- Mobile and tablet responsive testing - UI works on all devices
- Tested with multiple file types (ZIP, APK, IPA, EXE, DEB) and large files (up to 50MB)
- Fixed 8 bugs related to UI alignment, loading states, and error messages

Work Planned for Next Week

Beta Checkpoint Preparation (Due: Nov 24)

- Final integration testing of all features

- Security testing (authentication, input validation, file upload)
- Create demo video (5-7 minutes) showcasing key features
- Prepare presentation slides for Beta review
- Prepare Beta submission package with all required documentation

Documentation & Finalization

- User guide with screenshots
- API documentation for developers
- Deployment guide
- Known issues and troubleshooting section
- Executive summary for Beta submission

Performance Testing

- Load testing with multiple concurrent users
- Test system with various file sizes and types
- Verify response times for all operations
- Document system capacity and limits

Problems, obstacles, needs, or questions that I need help with from client, advisor, or instructor

Current Issues: - Render free tier has 30-second startup delay after inactivity (acceptable for Beta) - Large files (~50MB) take 2 minutes to process (adding progress indicator)

Overall Status

- Project Status Color: **Green**
- Project Status Color from Previous Week: **Green**