PROJECT TASK BREAKDOWN

Phase 1: Project Setup & Foundation
1.1 Dependencies Installation
1.2 Development Dependencies

Phase 2: Database Design & Setup
2.1 Design the database schema

2.2 Database Implementation

- [ ] Create database connection module
- [ ] Create database initialization script
- [ ] Add sample data for testing

Phase 3: Backend API Development
3.1 Authentication System

- [ ] Create JWT configuration and utilities
- [ ] Implement user registration endpoint
- [ ] Implement user login endpoint
- [ ] Implement JWT middleware for protected routes
- [ ] Create role-based authorization middleware (student/admin)

3.2 Lost ID Management API

- [ ] Create endpoint to get all lost IDs (student)
- [ ] Create endpoint to search lost IDs by name (student)
- [ ] Create endpoint to search lost IDs by student ID (student)
- [ ] Create endpoint to get single lost ID details (student)
- [ ] Create endpoint to add new lost ID (admin action)
- [ ] Create endpoint to update lost ID status (admin action)
- [ ] Implement image upload functionality for ID photos (admin action)

3.3 Claims Management API

- [ ] Create endpoint to submit claim (students)
- [ ] Create endpoint to get user's own claims (students)
- [ ] Create endpoint to get all claims (admin action)
- [ ] Create endpoint to approve/reject claims (admin action)
- [ ] Create endpoint to get claim details (admin action)
- [ ] Implement claim validation logic

3.4 Admin Dashboard API

- [ ] Create endpoint to get dashboard statistics
- [ ] Create endpoint to export claims data
- [ ] Create endpoint to manage user accounts

Phase 4: Frontend Development

4.1 HTML Structure

- [ ] Create base HTML template with navigation
- [ ] Create login/register pages
- [ ] Create main dashboard/browse page
- [ ] Create search results page
- [ ] Create claim submission form
- [ ] Create user profile/claims page
- [ ] Create admin dashboard
- [ ] Create admin claims review page

4.2 CSS Styling

- [ ] Style navigation and header
- [ ] Style authentication forms
- [ ] Style ID cards display grid
- [ ] Style search and filter components
- [ ] Style claim forms and status indicators
- [ ] Style admin dashboard components

4.3 JavaScript Frontend Logic

- [ ] Implement authentication state management
- [ ] Create login/logout functionality
- [ ] Implement ID browsing and display
- [ ] Create search functionality (name and ID)
- [ ] Create claim submission functionality
- [ ] Implement form validation
- [ ] Create user claims tracking
- [ ] Implement admin dashboard functionality
- [ ] Create claim review and processing features

Phase 5: Security & Validation

5.1 Input Validation

- [ ] Implement server-side validation for all endpoints
- [ ] Add client-side form validation
- [ ] Sanitize user inputs to prevent XSS
- [ ] Validate file uploads (type, size, security)

5.2 Security Measures

- [ ] Implement rate limiting for API endpoints
- [ ] Add CORS configuration
- [ ] Implement proper error handling (don't expose sensitive info)
- [ ] Add input sanitization middleware
- [ ] Implement secure file upload validation

5.3 Authentication Security

- [ ] Implement secure JWT token expiration
- [ ] Add refresh token functionality
- [ ] Implement proper password hashing
- [ ] Add account lockout after failed attempts
- [ ] Implement session management
- [ ] admin security log view

Phase 6: Features & Enhancements

6.2 User Experience

- [ ] Implement error messages and success notifications
- [ ] Create responsive mobile design

6.3 Admin Features

- [ ] Create admin user management
- [ ] Add bulk import functionality for lost IDs
- [ ] Create reporting and analytics

Phase 7: Testing & Quality Assurance of software
7.1 Testing

- [ ] Create unit tests for API endpoints
- [ ] Test authentication and authorization
- [ ] Test file upload functionality
- [ ] Test search and filtering
- [ ] Test claim submission and processing
- [ ] Perform cross-browser testing
- [ ] Test responsive design on various devices

7.2 Error Handling

- [ ] Create user-friendly error messages
- [ ] Test error scenarios and possible edge cases

Phase 8: Deployment & Production
8.1 Deploy Web application on a VPS

Phase 9: Documentation
9.1 Documentation

- [ ] Create API documentation
- [ ] Write user manual
- [ ] Create admin guide