



**“User Authentication System Integration Testing”**

INSE 6421: System Integration and Testing

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## SCOPE

1. **User Authentication and Management:** Enable user registration, login, and password reset functionalities.
2. **Access Management and User List:** Implement a protected route and retrieve a list of users.
3. **Security Measures:** Utilize hashing, salting, and access tokens for secure authentication.
4. **Error Handling for Clear Communication:** Provide informative error messages for various scenarios.
5. **Extensibility and Scalability:** Design for future upgrades like additional user information and roles.
6. **Data Persistence and Integrity:** Connect to a secure database for storing user data.
7. **User-Friendly Interfaces:** Implement intuitive interfaces for registration, login, and password reset.
8. **Testing and Quality Control:** Ensure API functionality and data security through rigorous testing.
9. **Monitoring and Logging Systems:** Implement systems to track API usage and security issues.
10. **Comprehensive Documentation:** Create detailed documentation covering functionality, endpoints, formats, and error codes.
11. **Token Management for Security:** Implement token expiration, refreshing, and revocation techniques.

### Scope of Testing:

#### 1. Unit Testing:

Ensures each unit performs as expected independently.

Focus: Isolation testing of individual components.

Components Tested:

- ☐ Sign in and Signup functions.

- ☐ Password-related functions (hashing, verification, reset)
- ☐ User profile functions (update, retrieve)

## 2. Integration Testing:

Validates that components work together as intended.

Focus: Verification of interactions between different components.

Integration Scenarios:

- ☐ Authentication flow (signup, sign in, private route access)
- ☐ User profile integration

## 3. System Testing:

Ensures the complete system behaves according to specified requirements.

Focus: Assessment of the entire system's compliance with requirements.

Testing Scopes:

- ☐ Security testing (authentication mechanisms)
- ☐ User journey testing (end-to-end scenarios)
- ☐ Performance testing (responsiveness under load)

## 4. Acceptance Testing:

Ensures the system meets business expectations and user needs.

Focus: Evaluation of system compliance with business requirements.

Testing Scopes:

- ☐ User Acceptance Testing (UAT)
- ☐ Security compliance testing

## 5. Installation Testing:

Assures the application can be successfully installed and run in the target environment.

Focus: Verification of the correctness of the installation process.

Testing Scopes:

- ☐ Deployment process testing
- ☐ Environment compatibility testing

Route API: <https://127.0.0.1:5000>.

Source Code: [https://github.com/DanishKarur/INSE\\_6421](https://github.com/DanishKarur/INSE_6421)