

## Phase 7: Integration & External Access

### Project: Debug Log Analysis and Bug Fixing in Salesforce Apex

#### 1. Objective of Phase 7

The purpose of this phase is to **integrate Salesforce DX project components** and provide controlled **external access** to support testing and debugging.

Although the project primarily focuses on Apex code and debugging, integration ensures:

- Salesforce DX project communicates correctly with the org.
- Apex classes and test classes are deployable and executable.
- Replay Debugger can work seamlessly with generated debug logs.

#### 2. Integration within Salesforce DX

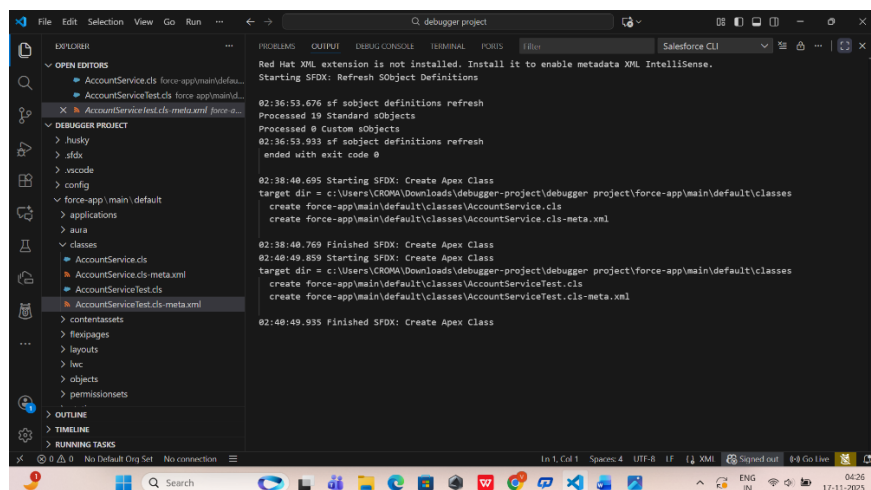
Key integration steps include:

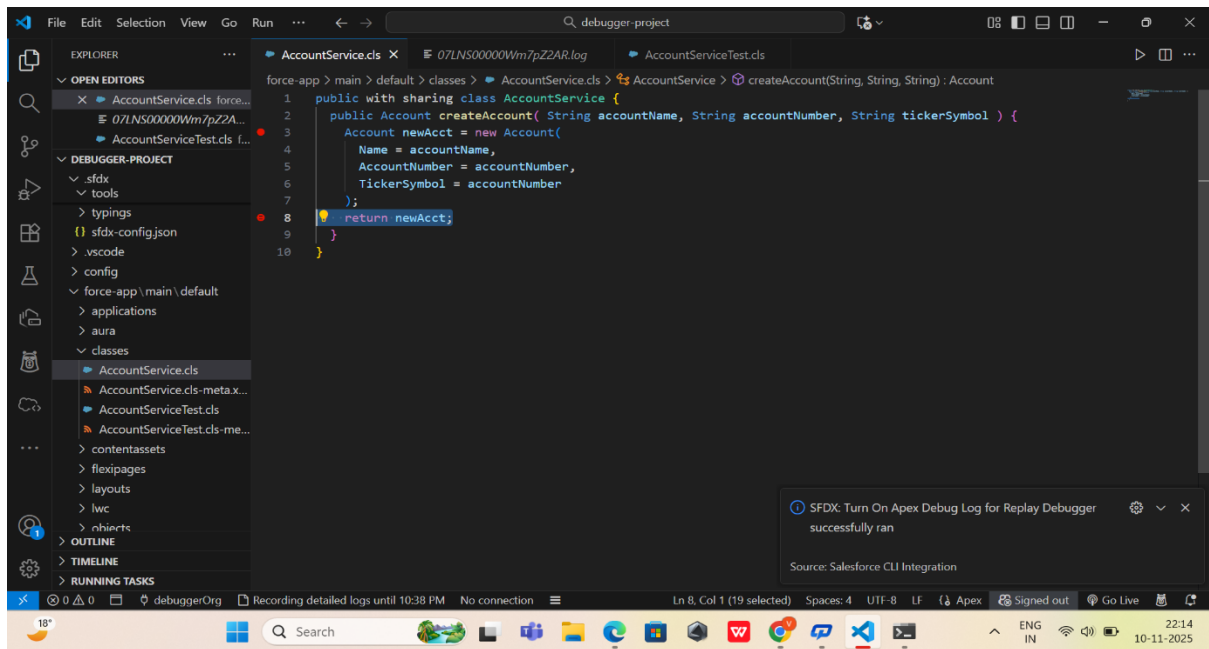
##### 1. Apex Class & Test Class Integration

- AccountService.cls (logic) integrated with AccountServiceTest.cls (test).
- Test class triggers execution of Apex logic and generates debug logs.

##### 2. Salesforce DX Project Structure Integration

- All classes, metadata, and configuration are part of the DX project:
  - force-app/main/default/classes
  - sfdx-project.json for org connections





### 3. UI Integration

- The minimal Lightning Web Component (from Phase 6) connects with Apex class.
- Allows manual triggering of methods to produce debug logs.

### 4. Replay Debugger Integration

- Debug logs generated during Apex execution are linked with breakpoints and checkpoints.
- Ensures Replay Debugger correctly maps execution flow to code lines.

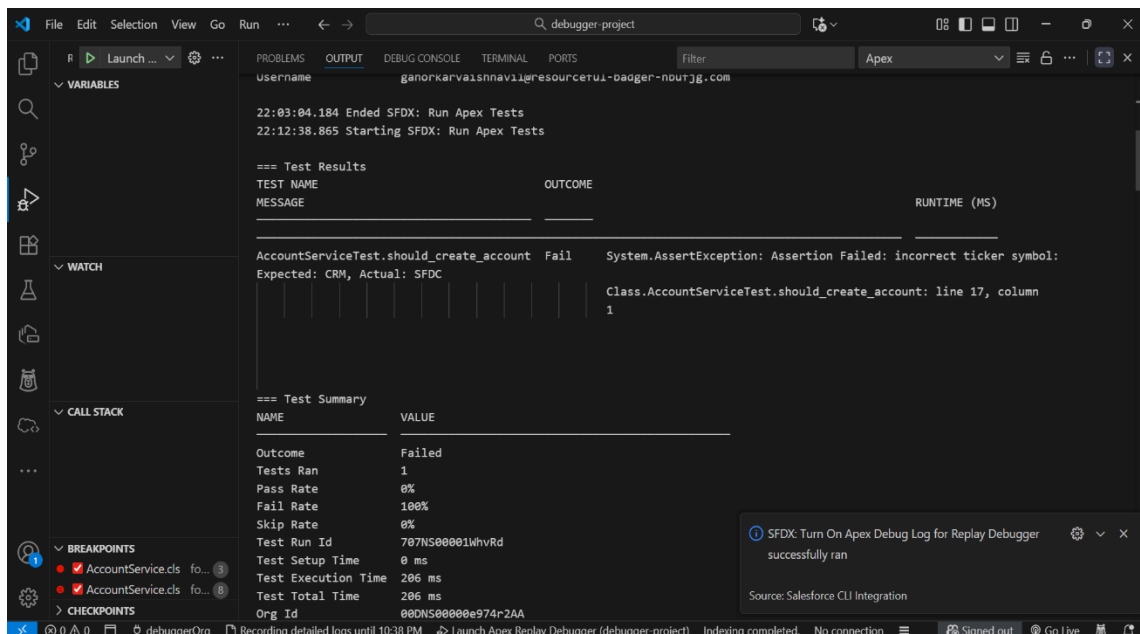
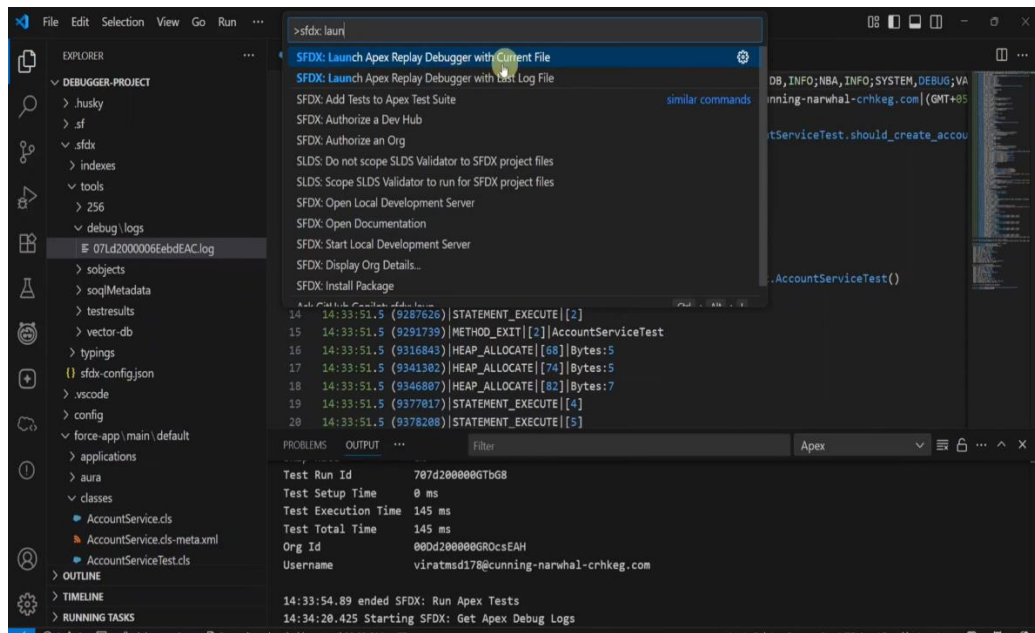
## 3. External Access Considerations

While the project does not require public external access, external integration can involve:

- **Trailhead Playground / Scratch Org Access**
  - Users (developers) authorize org via Salesforce CLI.
  - Access is required to deploy, run tests, and retrieve logs.
- **API / Tool Access**
  - CLI commands (`sfdx force:apex:test:run`, `sfdx force:apex:log:get`) act as external tools interacting with the org.
- **Security & Authorization**
  - Only authorized Salesforce users can execute Apex methods or view logs.
  - Protects sensitive data while allowing controlled debugging.

#### 4. Benefits of Integration & Controlled External Access

- Centralized control of Apex code, test classes, and logs
- Simplified testing process across multiple orgs or environments
- Replay Debugger works consistently because code, logs, and breakpoints are aligned
- Developers can test, debug, and deploy safely without affecting production



## 5. Deliverables of Phase 7

By the end of this phase:

- ✓ Apex classes, test classes, and UI fully integrated in DX project
- ✓ External access for authorized users via CLI or sandbox is configured
- ✓ Replay Debugger fully functional with integrated breakpoints and checkpoints
- ✓ Debugging workflow ready for real execution scenarios

## 6. Outcome

- Salesforce DX project is **fully integrated** and functional.
- Authorized developers can trigger Apex methods, run tests, and replay debug logs.
- Replay Debugger now works in a complete, end-to-end workflow from code → org → logs → debugging.