

The system shows high cohesion by keeping each class focused on a single task. Controllers like ApplicantController and ManagerController manage role-specific logic, while data classes like Project and Applicant handle only entity data. Interfaces such as VerificationInterface further ensure that related methods are grouped logically, making the system easier to maintain and understand.

LSP is implemented here through the inheritance hierarchy where Applicant, Officer, and Manager all extend the User class. This allows the system to treat any subclass of User as a User without breaking functionality

Polymorphism is displayed here so that all our Views are able to have their own implementation of Menu

OCP is displayed here as we are easily able to extend a new view class without modifying the original displayMenu()

Abstraction is displayed here to identify the relevant attributes that we need for our users

ISP is displayed here through the use of specific, role-based interfaces like VerificationInterface, PasswordChangerInterface, and CheckSecQuestInterface. Each repository class (e.g., OfficerRepository, ApplicantRepository) implements only the interfaces that are relevant to its function, ensuring they are not burdened with unnecessary methods.

DIP is displayed here because PasswordController, SecQuestController, depend on interfaces, not specific repositories. This makes our system highly flexible and decoupled, so repositories can change without affecting the controller logic.

SRP is displayed here as each interface has a single responsibility—for example, PasswordChangerInterface only handles password updates, ensuring focused and independent functionality.

Low coupling is achieved through the use of interfaces and repositories, which separate logic from implementation. Controllers depend on abstractions like VerificationInterface rather than concrete classes.

Encapsulation is used here as the application data in ApplicationRepository is kept private and can only be accessed through public methods like findApplicationById() or loadApplications(). This ensures controlled access and protects the internal data structure.

BTOMain

AuthenticationController

SignInController

UserController

ManagerView

ApplicantView

ForgotPasswordView

OfficerView

ManagerView

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