

# UML Behavioral Diagrams

## 1. State Diagram: Application Lifecycle

This diagram tracks the state of a Student's application as it moves through the system.

stateDiagram-v2

[\*] --> Draft

Draft --> Submitted: Student submits application

Submitted --> UnderReview: Mobility Officer opens task

state "Home University Review" as HomeReview {

UnderReview --> EligibilityCheck

EligibilityCheck --> Nominated: Criteria Met

EligibilityCheck --> Rejected: Criteria Failed

}

Nominated --> ForwardedToHost: Sent to Host University

state "Host University Review" as HostReview {

ForwardedToHost --> AdmissionReview

AdmissionReview --> Admitted: Accepted by Host

AdmissionReview --> Denied: Rejected by Host

}

Admitted --> VisaProcessing: Student requests Visa

state "Government Processing" as GovProcess {

```
    VisaProcessing --> BackgroundCheck: Legal Verifier
    BackgroundCheck --> VisaApproved: Clear
    BackgroundCheck --> VisaDenied: Flagged
}
```

```
VisaApproved --> Finalized: Program Ready
VisaDenied --> Terminated
Rejected --> Terminated
Denied --> Terminated
Finalized --> [*]
```

## 2. Sequence Diagram: Application Submission & Approval

This diagram shows the message passing between the specific objects in the Java code.

sequenceDiagram

```
participant Student as :StudentRole
participant AppOrg as :ApplicationProcessingOrg
participant Mobility as :MobilityOfficerRole
participant HostOrg as :IntlAdmissionsOrg
participant HostAdmin as :AdmissionsOfficerRole
```

Note over Student, AppOrg: Phase 1: Submission

```
Student->>Student: createStudyAbroadApplication()
```

```
Student->>AppOrg: workQueue.add(application)
```

```
AppOrg-->>Student: Confirm Submission (Status: "Pending")
```

Note over AppOrg, Mobility: Phase 2: Home Review

Mobility->>AppOrg: getWorkQueue().getWorkRequestList()

AppOrg-->>Mobility: return list of applications

Mobility->>Mobility: assessStudentEligibility(application)

alt is Eligible

    Mobility->>Mobility: setStatus("Nominated")

    Mobility->>HostOrg: workQueue.add(nominationRequest)

else is Not Eligible

    Mobility->>Student: setStatus("Rejected")

end

Note over HostOrg, HostAdmin: Phase 3: Host Review

HostAdmin->>HostOrg: getWorkQueue().getWorkRequestList()

HostAdmin->>HostAdmin: reviewNomination(nominationRequest)

HostAdmin->>Student: issueAcceptanceLetter()

HostAdmin->>Student: setStatus("Admitted")