**My Challan App – Deliverable - 2**

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| **Version** | **Date** | **Description** |
| Inception Draft | Nov 12, 2021 | First Inception Draft, will be refined during elaboration. |
| Elaboration Draft | Dec 19, 2021 | Improved Elaboration Draft |

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**Architecture:** MVC

**GitHub – Repository:** [**https://github.com/Ansi007/MyChallanApp-Deliverable-2**](https://github.com/Ansi007/MyChallanApp-Deliverable-2)

**Domain Model**

**Design Class Diagram**

**System Sequence Diagram – 1**

**System Sequence Diagram – 2**

**System Sequence Diagram – 3**

**Sequence Diagram (User View)**

**Sequence Diagram (Warden View)**

**Collaboration Diagram (User View)**

**Collaboration Diagram (Warden View)**

**USE CASE OPERATIONAL CONTRACTS**

**Contract CO1: Login**

**Operation:**

Login(CNIC, password)

**Cross Reference:**

Use Case: Sign in

**Pre-condition:**

CNIC and password are entered.

**Post condition:**

* + userLogin is initialized. (object initialization)
  + userLogin.CNIC became CNIC. (attribute modification)
  + userLogin.password became password. (attribute modification)
  + userLogin.Authenticate() was called.
  + On successful authentication all fields of User were initialized. (attribute modification)
  + The user was authorized to use the app.

**Contract CO2: SelectChallan**

**Operation Name:**

SelectChallan(challanId)

**Cross Reference:**

Use Case: Pay Challan

**Pre-Condition:**

A Challan was issued.

**Post Condition:**

* A Challan instance challan was created. (instance creation)
* challan.challanId became challanId. (attribute modification)
* Challan with challan.challanId was searched in the list.
* All fields of challan were initialized.
* The instance challan was returned.

**Contract CO3: IssueChallan**

**Operation Name:**

IssueChallan(CNIC)

**Cross Reference:**

Use Case: Issue Challan.

**Pre-Condition:**

* A traffic violation occurs.
* The violator's identity and vehicle are verified
* A challan is underway.

**Post-Condition:**

* All field of instance challan were initialized and set. (Attribute modification).
* Instance challan was added in user’s database and list.
* User was notified that the challan has been issued.