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# Requirements Model

## Domain Object Model

### Overview

#### Class Diagram of User Data

1. Class Diagram of User Data

#### Class Diagram of Main Business Objects

1. Class Diagram of Main Business Objects

#### Class Diagram Showing Inheritance

1. Class Diagram Showing Inheritance

### Domain Objects

The Business Object Model contains a set of interacting workers and business entity (domain) classes which collaborate to enact the business processes. In this case, only the business entity classes are documented. The business entity classes as a whole are also referred to as a 'domain object model'.

#### Advert Item

This domain object represents an advert to be broadcast in a time slot of a running order of a scheduled program, as defined by a producer or presenter.

#### Annual Schedule

This domain object represents the annual radio station program schedule as a list of weekly schedules.

#### Audit Item

This domain object represents an advert to be broadcast in a time slot of a running order of a scheduled program, as defined by a producer or presenter.

#### Chart Item

This domain object represents an item in a generated music chart, which would a musical item from the current or past playlist.

#### List

This domain object represents the common behavior of all list objects.

#### List of Annual Schedules

This domain object represents the list of annual schedules - pass, present and future - that are maintained by the system.

# Use Case Realization

## Forgot Password

### Class Diagram for Forgot Password



1. Forget password

### Collaboration Diagram for Forgot Password



1. Forget password

Main Workflow

1 'submit email' from ':System user' sent to ':ForgetPasswordScreen'.

1.1 'find user' from ':ForgetPasswordScreen' sent to ':UserList'.

1.2 'read user' from ':UserList' sent to ':User'.

1.3 'send reset password link' from ':ForgetPasswordScreen' sent to ':Email'.

1.4 'display message' from ':ForgetPasswordScreen' sent to ':ForgetPasswordScreen'.

2 'acknowledge' from ':System user' sent to ':ForgetPasswordScreen'.

## Login

### Class Diagram for Login



1. Login

### Collaboration Diagram for Login



1. Login

Main Workflow

1 'submit credentials' from ':System user' sent to ':LoginScreen'.

1.1 'find user' from ':LoginScreen' sent to ':UserList'.

1.2 'read user' from ':UserList' sent to ':User'.

1.3 'read persona' from ':LoginScreen' sent to ':Persona'.

1.4 'read role' from ':LoginScreen' sent to ':Role'.

1.5 'add online user' from ':LoginScreen' sent to ':OnlineUserList'.

1.6 'create' from ':LoginScreen' sent to ':OnlineUser'.

## Maintain Persona

### Class Diagram for Maintain Persona

### Collaboration Diagram for Create Persona



1. Create persona

Main Workflow

1 'submit persona info' from ':Admin' sent to ':PersonaScreen'.

1.1 'add persona' from ':PersonaScreen' sent to ':PersonaList'.

1.2 'read persona' from ':PersonaList' sent to ':Persona'.

1.3 'create' from ':PersonaScreen' sent to ':Persona'.

1.4 'display success' from ':PersonaScreen' sent to ':PersonaScreen'.

2 'acknowledge' from ':Admin' sent to ':PersonaScreen'.

2.1 'close screen' from ':PersonaScreen' sent to ':PersonaScreen'.

### Collaboration Diagram for Update Persona



1. Update persona

Main Workflow

1 'submit persona info' from ':Admin' sent to ':PersonaScreen'.

1.1 'update persona' from ':PersonaScreen' sent to ':Persona'.

1.2 'display success' from ':PersonaScreen' sent to ':PersonaScreen'.

2 'acknowledge' from ':Admin' sent to ':PersonaScreen'.

2.1 'close screen' from ':PersonaScreen' sent to ':PersonaScreen'.

## Maintain Station

### Class Diagram for Maintain Station



1. Maintain station

### Collaboration Diagram for Create Station



1. Create station

Main Workflow

1 'select station config' from ':Admin' sent to ':StationScreen'.

1.1 'select station config' from ':StationScreen' sent to ':StationConfigList'.

1.2 'read station config' from ':StationConfigList' sent to ':StationConfig'.

2 'submit station info' from ':Admin' sent to ':StationScreen'.

2.1 'add station' from ':StationScreen' sent to ':StationList'.

2.2 'create' from ':StationScreen' sent to ':Station'.

2.3 'display success' from ':StationScreen' sent to ':StationScreen'.

3 'acknowledge' from ':Admin' sent to ':StationScreen'.

3.1 'close screen' from ':StationScreen' sent to ':StationScreen'.

### Collaboration Diagram for Modify Station



1. Modify station

Main Workflow

1 'select group' from ':Admin' sent to ':StationScreen'.

1.1 'select station config' from ':StationScreen' sent to ':StationConfigList'.

1.2 'read station config' from ':StationConfigList' sent to ':StationConfig'.

2 'submit device info' from ':Admin' sent to ':StationScreen'.

2.1 'update station' from ':StationScreen' sent to ':Station'.

2.2 'display success' from ':StationScreen' sent to ':StationScreen'.

3 'acknowledge' from ':Admin' sent to ':StationScreen'.

3.1 'close screen' from ':StationScreen' sent to ':StationScreen'.

### Collaboration Diagram for Deactivate Station



1. Deactivate station

Main Workflow

1 'deactivate station' from ':Admin' sent to ':StationScreen'.

1.1 'display confirmation' from ':StationScreen' sent to ':StationScreen'.

2 'confirm' from ':Admin' sent to ':StationScreen'.

2.1 'deactivate' from ':StationScreen' sent to ':Station'.

2.2 'display success' from ':StationScreen' sent to ':StationScreen'.

3 'acknowledge' from ':Admin' sent to ':StationScreen'.

3.1 'close screen' from ':StationScreen' sent to ':StationScreen'.

## Maintain Station Config

### Config Class Diagram for Maintain Station



1. Maintain station config

### Collaboration Diagram for Create Station Config



1. Create station config

Main Workflow

1 'add data config' from ':Admin' sent to ':StationConfigScreen'.

1.1 'add data config' from ':StationConfigScreen' sent to ':DataConfigList'.

1.2 'create' from ':StationConfigScreen' sent to ':DataConfig'.

2 'add health config' from ':Admin' sent to ':StationConfigScreen'.

2.1 'add health config' from ':StationConfigScreen' sent to ':HealthConfigList'.

2.2 'create' from ':StationConfigScreen' sent to ':HealthConfig'.

3 'submit station config info' from ':Admin' sent to ':StationConfigScreen'.

3.1 'create' from ':StationConfigScreen' sent to ':StationConfig'.

3.2 'setHealthConfigList' from ':StationConfigScreen' sent to ':StationConfig'.

3.3 'setDataConfigList' from ':StationConfigScreen' sent to ':StationConfig'.

3.4 'add station config' from ':StationConfigScreen' sent to ':StationConfigList'.

3.5 'display success' from ':StationConfigScreen' sent to ':StationConfigScreen'.

4 'acknowledge' from ':Admin' sent to ':StationConfigScreen'.

4.1 'close screen' from ':StationConfigScreen' sent to ':StationConfigScreen'.

### Collaboration Diagram for Update Station Config



1. Update station config

Main Workflow

1 'add data config' from ':Admin' sent to ':StationConfigScreen'.

1.1 'create' from ':StationConfigScreen' sent to ':DataConfig'.

1.2 'add data config' from ':StationConfigScreen' sent to ':DataConfigList'.

2 'add health config' from ':Admin' sent to ':StationConfigScreen'.

2.1 'create' from ':StationConfigScreen' sent to ':HealthConfig'.

2.2 'add health config' from ':StationConfigScreen' sent to ':HealthConfigList'.

3 'submit station config info' from ':Admin' sent to ':StationConfigScreen'.

3.1 'update station config' from ':StationConfigScreen' sent to ':StationConfig'.

3.2 'display success' from ':StationConfigScreen' sent to ':StationConfigScreen'.

4 'acknowledge' from ':Admin' sent to ':StationConfigScreen'.

4.1 'close screen' from ':StationConfigScreen' sent to ':StationConfigScreen'.

### Collaboration Diagram for Create Station Config



1. Delete station config

Main Workflow

1 'delete station config' from ':Admin' sent to ':StationConfigScreen'.

1.1 'display confirmation' from ':StationConfigScreen' sent to ':StationConfigScreen'.

2 'confirm' from ':Admin' sent to ':StationConfigScreen'.

2.1 'delete' from ':StationConfigScreen' sent to ':StationConfig'.

2.2 'display success' from ':StationConfigScreen' sent to ':StationConfigScreen'.

3 'acknowledge' from ':Admin' sent to ':StationConfigScreen'.

3.1 'close screen' from ':StationConfigScreen' sent to ':StationConfigScreen'.

## Maintain Users

### Class Diagram for Maintain Users



1. Maintain users

### Collaboration Diagram for Create User



1. Create user

Main Workflow

1 'select role' from ':Admin' sent to ':UserScreen'.

1.1 'select role' from ':UserScreen' sent to ':RoleList'.

1.2 'read role' from ':RoleList' sent to ':Role'.

2 'select station' from ':Admin' sent to ':UserScreen'.

2.1 'select station' from ':UserScreen' sent to ''.

2.2 'read station' from '' sent to ''.

3 'select persona' from ':Admin' sent to ':UserScreen'.

3.1 'select persona' from ':UserScreen' sent to ':PersonaList'.

3.2 'read persona' from ':PersonaList' sent to ':Persona'.

4 'submit user info' from ':Admin' sent to ':UserScreen'.

4.1 'add user' from ':UserScreen' sent to ':UserList'.

4.2 'read user' from ':UserList' sent to ':User'.

4.3 'create' from ':UserScreen' sent to ':User'.

4.4 'display success' from ':UserScreen' sent to ':UserScreen'.

5 'acknowledge' from ':Admin' sent to ':UserScreen'.

5.1 'close screen' from ':UserScreen' sent to ':UserScreen'.

### Collaboration Diagram for Modify user



1. Modify user

Main Workflow

1 'select role' from ':Admin' sent to ':UserScreen'.

1.1 'select role' from ':UserScreen' sent to ':RoleList'.

1.2 'read role' from ':RoleList' sent to ':Role'.

1 'select role' from ':Admin' sent to ':UserScreen'.

1.1 'select role' from ':UserScreen' sent to ':RoleList'.

1.2 'read role' from ':RoleList' sent to ':Role'.

2 'select station' from ':Admin' sent to ':UserScreen'.

2.1 'select station' from ':UserScreen' sent to ''.

2.2 'read station' from '' sent to ''.

3 'select persona' from ':Admin' sent to ':UserScreen'.

3.1 'select persona' from ':UserScreen' sent to ':PersonaList'.

3.2 'read persona' from ':PersonaList' sent to ':Persona'.

4 'submit user info' from ':Admin' sent to ':UserScreen'.

4.1 'update user' from ':UserScreen' sent to ':User'.

4.2 'display success' from ':UserScreen' sent to ':UserScreen'.

5 'acknowledge' from ':Admin' sent to ':UserScreen'.

5.1 'close screen' from ':UserScreen' sent to ':UserScreen'.

### Collaboration Diagram for Deactivate user



1. Dactivate user

Main Workflow

1 'deactivate user' from ':Admin' sent to ':UserScreen'.

1.1 'display confirmation' from ':UserScreen' sent to ':UserScreen'.

2 'confirm' from ':Admin' sent to ':UserScreen'.

2.1 'deactivate user' from ':UserScreen' sent to ':User'.

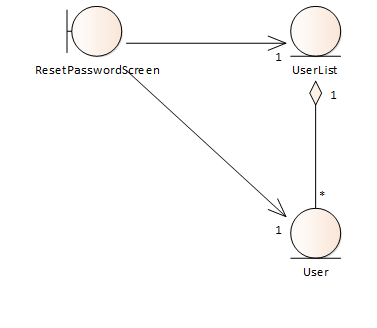
2.2 'display success' from ':UserScreen' sent to ':UserScreen'.

3 'acknowledge' from ':Admin' sent to ':UserScreen'.

3.1 'close screen' from ':UserScreen' sent to ':UserScreen'.

## Reset password

### Class Diagram for Reset password



1. Reset password

### Collaboration Diagram for Reset password



1. Reset password

Main Workflow

1 'submit new password' from ':System user' sent to ':ResetPasswordScreen'.

1.1 'find user' from ':ResetPasswordScreen' sent to ':UserList'.

1.2 'read user' from ':UserList' sent to ':User'.

1.3 'update password' from ':ResetPasswordScreen' sent to ':User'.

1.4 'display success message' from ':ResetPasswordScreen' sent to ':ResetPasswordScreen'.

2 'acknowledge' from ':System user' sent to ':ResetPasswordScreen'.

## Process device data

### Class Diagram for Process device data



1. Process device data

### Collaboration Diagram for Process device data



1. Process device data

Main Workflow

1 'send data' from ':Device' sent to ':AWSIoT'.

1.1 'create' from ':AWSIoT' sent to ':StationRawData'.

1.2 'add raw data' from ':AWSIoT' sent to ':StationRawDataList'.

## Synchronize structured data

### Class Diagram for Synchronize structured data



1. Synchronize structured data

### Collaboration Diagram for Synchronize structured data



1. Synchronize structured data

Main Workflow

1 'get online users' from ':SynchronizationSchedulerJob' sent to ':OnlineUserList'.

1.1 'read online user' from ':OnlineUserList' sent to ':OnlineUser'.

1.2 'read online user' from ':SynchronizationSchedulerJob' sent to ':OnlineUser'.

1.3 'get assigned stations' from ':SynchronizationSchedulerJob' sent to ''.

1.4 'read station' from '' sent to ''.

1.5 'read station' from ':SynchronizationSchedulerJob' sent to ''.

1.6 'get device data' from ':SynchronizationSchedulerJob' sent to ':OneSecondStationDataList'.

1.7 'read device data' from ':OneSecondStationDataList' sent to ':OneSecondStationData'.

1.8 'read device data' from ':SynchronizationSchedulerJob' sent to ':OneSecondStationData'.

1.9 'get device health device data' from ':SynchronizationSchedulerJob' sent to ':StationHealthDataList'.

1.10 'read device health data' from ':StationHealthDataList' sent to ':StationHealthData'.

1.11 'read device health data' from ':SynchronizationSchedulerJob' sent to ':StationHealthData'.

1.12 'send data' from ':SynchronizationSchedulerJob' sent to ':DashboardScreen'.

## Transform station data

### Class Diagram for Transform station data



1. Transform station data Class Diagram for

### Collaboration Diagram for Transform station data



1. Transform station data Collaboration Diagram for

Main Workflow

1 'get raw data' from ':Logstash' sent to ':StationRawDataList'.

1.1 'read station raw data' from ':StationRawDataList' sent to ':StationRawData'.

1.2 'read station raw data' from ':Logstash' sent to ':StationRawData'.

1.3 'transform raw data' from ':Logstash' sent to ':Logstash'.

1.4 'create' from ':Logstash' sent to ':StationHealthData'.

1.5 'add station health data' from ':Logstash' sent to ':StationHealthDataList'.

1.6 'create' from ':Logstash' sent to ':OneMinuteStationData'.

1.7 'add one minute station data' from ':Logstash' sent to ':OneMinuteStationDataList'.

1.8 'create' from ':Logstash' sent to ':OneSecondStationData'.

1.9 'add one second station data' from ':Logstash' sent to ':OneSecondStationDataList'.

## View/Select Persona

### Class Diagram for View/Select Persona



1. View/select persona

### Collaboration Diagram for View/Select Persona

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1. View/select persona

Main Workflow

1 'load personas' from ':PersonaListScreen' sent to ':PersonaList'.

1.1 'read persona' from ':PersonaList' sent to ':Persona'.

1.2 'display personas' from ':PersonaListScreen' sent to ':PersonaListScreen'.

1.3 'read persona' from ':PersonaListScreen' sent to ':Persona'.

2 'select persona' from ':Admin' sent to ':PersonaListScreen'.

2.1 'show persona screen' from ':PersonaListScreen' sent to ':PersonaScreen'.

2.2 'display persona data' from ':PersonaScreen' sent to ':PersonaScreen'.

2.3 'read data' from ':PersonaScreen' sent to ':Persona'.

3 'acknowledge' from ':Admin' sent to ':PersonaScreen'.

3.1 'close screen' from ':PersonaScreen' sent to ':PersonaScreen'.

3.2 'show persona list screen' from ':PersonaScreen' sent to ':PersonaListScreen'.

.

## View/Select Station Config

### Class Diagram for View/Select Station Config



1. View/select Station Config Class Diagram for

### Collaboration Diagram for View/Select Station Config



1. View/select Station Config Collaboration Diagram for

Main Workflow

1 'load station configs' from ':StationConfigListScreen' sent to ':StationConfigList'.

1.1 'read station config' from ':StationConfigList' sent to ':StationConfig'.

1.2 'display station configs' from ':StationConfigListScreen' sent to ':StationConfigListScreen'.

1.3 'read station config' from ':StationConfigListScreen' sent to ':StationConfig'.

2 'select station group' from ':Admin' sent to ':StationConfigListScreen'.

2.1 'show station config screen' from ':StationConfigListScreen' sent to ':StationConfigScreen'.

2.2 'display station config data' from ':StationConfigScreen' sent to ':StationConfigScreen'.

2.3 'read station config' from ':StationConfigScreen' sent to ':StationConfig'.

2.4 'getDataConfigList' from ':StationConfigScreen' sent to ':StationConfig'.

2.5 'getHealthConfigList' from ':StationConfigScreen' sent to ':StationConfig'.

2.6 'get data configs' from ':StationConfigScreen' sent to ':DataConfigList'.

2.7 'read data config' from ':DataConfigList' sent to ':DataConfig'.

2.8 'read data config' from ':StationConfigScreen' sent to ':DataConfig'.

2.9 'get health configs' from ':StationConfigScreen' sent to ':HealthConfigList'.

2.10 'read health config' from ':HealthConfigList' sent to ':HealthConfig'.

2.11 'read health config' from ':StationConfigScreen' sent to ':HealthConfig'.

3 'acknowledge' from ':Admin' sent to ':StationConfigScreen'.

3.1 'close screen' from ':StationConfigScreen' sent to ':StationConfigScreen'.

3.2 'show station config list screen' from ':StationConfigScreen' sent to ':StationConfigListScreen'.

## View/Select Station(s)

### Class Diagram for View/Select Station(s)



1. View/select Station(s) Class Diagram for

### Collaboration Diagram for View/Select Station(s)



1. View/select Station(s) Collaboration Diagram for

Main Workflow

1 'load stations' from ':StationListScreen' sent to ':StationList'.

1.1 'read station' from ':StationList' sent to ':Station'.

1.2 'display stations' from ':StationListScreen' sent to ':StationListScreen'.

1.3 'read device' from ':StationListScreen' sent to ':Station'.

2 'submit station name' from ':Admin' sent to ':StationListScreen'.

2.1 'find stations' from ':StationListScreen' sent to ':StationList'.

2.2 'read station' from ':StationList' sent to ':Station'.

2.3 'display stations' from ':StationListScreen' sent to ':StationListScreen'.

2.4 'read station' from ':StationListScreen' sent to ':Station'.

3 'select station' from ':Admin' sent to ':StationListScreen'.

3.1 'show station screen' from ':StationListScreen' sent to ':StationScreen'.

3.2 'load station groups' from ':StationScreen' sent to ':StationConfigList'.

3.3 'read station group' from ':StationConfigList' sent to ':StationConfig'.

3.4 'display station data' from ':StationScreen' sent to ':StationScreen'.

3.5 'read device' from ':StationScreen' sent to ':Station'.

4 'acknowledge' from ':Admin' sent to ':StationScreen'.

4.1 'read station group' from ':StationScreen' sent to ':StationConfig'.

4.2 'close screen' from ':StationScreen' sent to ':StationScreen'.

4.3 'show station list screen' from ':StationScreen' sent to ':StationListScreen'.

.

## View/Select User(s)

### Class Diagram for View/Select User(s)



1. View/select user(s) Class Diagram for

### Collaboration Diagram for View/Select User(s)



1. View/select user(s) Collaboration Diagram for

Main Workflow

1 'load users' from ':UserListScreen' sent to ':UserList'.

1.1 'read user' from ':UserList' sent to ':User'.

1.2 'display users' from ':UserListScreen' sent to ':UserListScreen'.

2 'submit user name' from ':Admin' sent to ':UserListScreen'.

1.3 'read user' from ':UserListScreen' sent to ':User'.

2.1 'find users' from ':UserListScreen' sent to ':UserList'.

2.2 'read user' from ':UserList' sent to ':User'.

3 'select user' from ':Admin' sent to ':UserListScreen'.

3.1 'show user screen' from ':UserListScreen' sent to ':UserScreen'.

3.2 'load roles' from ':UserScreen' sent to ':RoleList'.

3.3 'read role' from ':RoleList' sent to ':Role'.

3.4 'load personas' from ':UserScreen' sent to ':PersonaList'.

3.5 'read persona' from ':PersonaList' sent to ':Persona'.

3.6 'display users' from ':UserListScreen' sent to ':UserListScreen'.

3.7 'read user' from ':UserListScreen' sent to ':User'.

3.8 'display user data' from ':UserScreen' sent to ':UserScreen'.

3.9 'read user' from ':UserScreen' sent to ':User'.

3.10 'read role' from ':UserScreen' sent to ':Role'.

3.11 'read persona' from ':UserScreen' sent to ':Persona'.

3.12 'get assigned stations' from ':UserScreen' sent to ''.

3.13 'read station' from '' sent to ''.

3.14 'read station' from ':UserScreen' sent to ''.

4 'acknowledge' from ':Admin' sent to ':UserScreen'.

4.1 'close screen' from ':UserScreen' sent to ':UserScreen'.

4.2 'show user list screen' from ':UserScreen' sent to ':UserListScreen'.

## Download history data

## Submit download request

## Send data

## Upload batch data

## Submit error report

## View/select error report

## Close error report

## View station history information

## Monitor station data

## Monitor station health

## Clean old fast data

## Generate download file