Student__Agent

StudentAttendanceProfile__Entity
- studentId : Integer
- studentName : String
- subjectId : Integer
- subjectName : String

LectureAttendance__Entity
- studentId : Integer
- studentName : String
- subjectId : Integer
- subjectName : String
- lectureId : Integer
- lectureDate : Sequence(Integer)
- isAttended : Boolean

FaceplusImageProcessor__Agent

FaceImage__Entity
- binary : String
- format : String

SubjectProfile__Entity
- subjectId : Integer
- subjectName : String
- location_start_x : Integer
- location_end_x : Integer
- location_start_y : Integer
- location_end_y : Integer

StudentLocation__Entity
- x : Real
- y : Real

AttendenceCheck__Event

RegisterAttendance__Event

FaceplusFaceRecognizer__Agent

FaceplusTimer__Agent
- startTime : Sequence(Integer)
- endTime : Sequence(Integer)
- currentTime : Sequence(Integer)

Lecturer__Agent

ValidateFaceImage__Event

FaceplusLocator__Agent

ValidateLocation__Event

FaceplusAttendanceValidator__Agent

Subject_Entity

Relationships and labels:
- trackedBy_a, Tracking_a, tracks_a, 1..*, 1
- AttendenceStatus
- hasSetOf, lectureAttendance__Entity
- trackedBy_b, Tracking_b, tracks_b
- providesImage, Providing, providedImageBy
- creates_b, Creating_b, createdBy_b
- participatesIn, Participating, participatedBy
- contains, RegisteredImage, belongsTo
- Generating, generates, generatedBy
- modifiedBy, Modifying, modifies
- SubjectAttendanceStatus
- hasRelatedSetOf
- inputs_a, Inputting_a, inputtedBy_a
- Enabling, enables, enabledBy, Ending, ends, endedBy
- invokes_a, Invoking_a, invokedBy_a
- invokes_b, Invoking_b, invokedBy_b
- starts, Starting, startedBy
- created_by_a, Creating_a, creates_a
- determinedBy, Determining, determines
- createdBy_c, Creating_c, creates_c
- inputs_b, Inputting_b, inputtedBy_b
- trackedBy_c, Tracking_c
- Invoking_c, Creating_d
- invokedBy_c, invokes_c, createdBy_d, creates_d

Object Constraint Language Script:

model FaceplusModel

class Student__Agent

attributes

end

class Lecturer__Agent

attributes

end

class FaceplusLocator__Agent

attributes

end

class FaceplusFaceRecognizer__Agent

attributes

end

class FaceplusAttendenceValidator__Agent

attributes

end

class FaceplusTimer__Agent

attributes

```
        startTime: Sequence(Integer)

        endTime: Sequence(Integer)

        currentTime: Sequence(Integer)

end


class LectureAttendence__Entity

attributes

        studentId: Integer

        studentName: String

        subjectId: Integer

        subjectName: String

        lectureId: Integer

        lectureDate: Sequence(Integer)

        isAttended: Boolean

end


class StudentAttendanceProfile__Entity

attributes

        studentId: Integer

        studentName: String

        subjectId: Integer

        subjectName: String

end


class SubjectProfile__Entity
```

```
attributes
    subjectId: Integer
    subjectName: String
    location_start_x: Integer
    location_end_x: Integer
    location_start_y: Integer
    location_end_y: Integer
end

class Subject_Entity
attributes
end

class AttendenceCheck__Event
attributes
end

class FaceImage__Entity
attributes
    binary: String
    format: String
end

class StudentLocation__Entity
attributes
```

```
        x: Real
        y: Real
end


class RegisterAttendence__Event
attributes
end


class FaceplusImageProcessor__Agent
attributes
end


class ValidateFaceImage__Event
attributes
end


class ValidateLocation__Event
attributes
end


association Tracking_a between
    Student__Agent[1] role trackedBy_a
    StudentAttendanceProfile__Entity[1..*] role tracks_a
end
```

association Tracking_b between

    Student__Agent[1] role trackedBy_b

    StudentLocation__Entity[1] role tracks_b

end

association Modifying between

    FaceplusAttendenceValidator__Agent[1] role modifies

    StudentAttendanceProfile__Entity[1..*] role modifiedBy

end

association Determining between

    StudentLocation__Entity[1..*] role determinedBy

    FaceplusLocator__Agent[1] role determines

end

association RegisteredImage between

    StudentAttendanceProfile__Entity[1] role contains

    FaceImage__Entity[1] role belongsTo

end

association Creating_a between

    Lecturer__Agent[1] role creates_a

    AttendenceCheck__Event[0..*] role created_by_a

end

association Participating between

    Student__Agent[0..*] role participatesIn

    AttendenceCheck__Event[1] role participatedBy

end

association Providing between

    Student__Agent[0..*] role providesImage

    FaceplusImageProcessor__Agent[1] role providedImageBy

end

association Generating between

    FaceplusImageProcessor__Agent[1] role generates

    FaceImage__Entity[1..*] role generatedBy

end

association Creating_b between

    Student__Agent[1] role creates_b

    RegisterAttendence__Event[0..*] role createdBy_b

end

association Enabling between

    AttendenceCheck__Event[1] role enables

    RegisterAttendence__Event[0..*] role enabledBy

end

association Ending between

    FaceplusTimer__Agent[1] role ends

    AttendenceCheck__Event[1] role endedBy

end

association Starting between

    AttendenceCheck__Event[1] role starts

    FaceplusTimer__Agent[1] role startedBy

end

association AttendenceStatus between

    StudentAttendanceProfile__Entity[1] role hasSetOf

    LectureAttendence__Entity[0..*]

end

association SubjectAttendenceStatus between

    SubjectProfile__Entity[1] role hasRelatedSetOf

    LectureAttendence__Entity[0..*]

end

association Invoking_a between

    RegisterAttendence__Event[1] role invokes_a

    FaceplusAttendenceValidator__Agent[1] role invokedBy_a

end

association Tracking_c between

    Subject_Entity[1] role trackedBy_c

    SubjectProfile__Entity[1] role tracks_c

end

association Creating_c between

    FaceplusAttendenceValidator__Agent[1] role creates_c

    ValidateFaceImage__Event[1] role createdBy_c

end

association Creating_d between

    FaceplusAttendenceValidator__Agent[1] role creates_d

    ValidateLocation__Event[1] role createdBy_d

end

association Invoking_b between

    ValidateFaceImage__Event[1] role invokes_b

    FaceplusFaceRecognizer__Agent[1] role invokedBy_b

end

association Invoking_c between

    ValidateLocation__Event[1] role invokes_c

    FaceplusLocator__Agent[1] role invokedBy_c

end

association Inputting_a between

    FaceImage__Entity[0..*] role inputs_a

    FaceplusFaceRecognizer__Agent[1] role inputtedBy_a

end

association Inputting_b between

    FaceplusAttendenceValidator__Agent[1] role inputtedBy_b

    SubjectProfile__Entity[0..*] role inputs_b

end