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| Project scenario name | VEHICLE SECURITY APP |
| S/w Requirement Specification | 7-oct-2013 |

**VEHICLE SECURITY APP**

Software Requirement Specification

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**Collage Name**: NIT, Tiruchirappalli

**Department**: Computer Applications

**State**: TamilNadu

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**SOFTWARE REQUIREMENT SPECIFICATION**

* **Student’s Present Scenario:** In NITT the cases to missing cycles are increasing day by day. The students always end up wasting their time, efforts and money in search of the missing vehicle. At the end of the day they are left with no cycle.
* **Purpose:** Purpose of this project is to provide automated application to the students to register their cycle. This registration generates a unique vehicle id and a card with a unique number which . This card number when entered at the main gate will generate the same unique vehicle id, thus validates that the cycle is with the owner only.
* **Definition, Acronyms and Abbreviation :**
* **Technology to be used:**

C++

* **Constraint:**

The card will be a must for the students while crossing the gates, which will help the gates security to validate the authenticated owner of the cycle otherwise the student wont be allowed to cross the gates.

**VEHICLE\_SECURITY**

**Report on Configuration DefaultConfig**

Packages

Default

Language: C++

Globals:

Classes:

**VehicleSecurity**

VehicleSecurity

Language: C++

Object Model Diagrams:

**VehicleRegistration**

****

**Overridden Properties**

Subjects:

**Format**

Metaclasses:

**Class**

Properties:

Line.LineWidth: 1

Font.FontColor: 0,0,0

Font.Font: Arial

Fill.FillColor: 255,255,255

Line.LineStyle: 0

DefaultSize: 0,34,84,148

Font.Size: 10

Line.LineColor: 121,122,0

**Object**

Properties:

Font.Underline@Child.NameCompartment@Name: 1

Line.LineWidth: 1

Font.FontColor: 0,0,0

Font.Font: Arial

Fill.FillColor: 255,255,255

Line.LineStyle: 0

DefaultSize: 0,34,84,148

Font.Size: 10

Line.LineColor: 121,122,0

**VehicleSecurityApp**

****

**Overridden Properties**

Subjects:

**Format**

Metaclasses:

**Class**

Properties:

Line.LineWidth: 1

Font.FontColor: 0,0,0

Font.Font: Arial

Fill.FillColor: 255,255,255

Line.LineStyle: 0

DefaultSize: 0,34,84,148

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Properties:

Font.Underline@Child.NameCompartment@Name: 1

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Font.Font: Arial

Fill.FillColor: 255,255,255

Line.LineStyle: 0

DefaultSize: 0,34,84,148

Font.Size: 10

Line.LineColor: 121,122,0

Sequence Diagrams:

**Vehicle\_security\_system**

****

**Overridden Properties**

Subjects:

**Format**

Metaclasses:

**InstanceLine**

Properties:

Line.LineWidth: 0

Font.FontColor: 0,0,0

Font.Font: Arial

Fill.FillColor: 255,255,255

DefaultSize: 0,0,96,437

Font.Size: 10

Line.LineColor: 121,122,0

**Message**

Properties:

Line.LineWidth: 1

Font.FontColor: 0,0,128

Font.Font: Arial

Font.Size: 10

Line.LineColor: 0,112,0

**EnvironmentLine**

Properties:

Line.LineWidth: 1

Font.FontColor: 0,0,0

Font.Font: Arial

Fill.FillColor: 255,255,255

DefaultSize: 0,0,96,437

Font.Size: 10

Line.LineColor: 0,0,0

**SequenceDiagram**

Metaclasses:

**General**

Properties:

ClassCentricMode: True

RealizeMessages: True

CleanupRealized: True

Use Case Diagrams:

**CycleReg**

****

**Overridden Properties**

Subjects:

**Format**

Metaclasses:

**Actor**

Properties:

Line.LineWidth: 1

Font.FontColor: 0,0,128

Font.Font: Arial

Fill.FillColor: 255,255,255

DefaultSize: 0,26,84,168

Font.Size: 10

Line.LineColor: 111,0,107

**Ellipse**

Properties:

Line.LineWidth: 0

**UseCase**

Properties:

Line.LineWidth: 1

Font.FontColor: 0,0,0

Font.Font: Arial

Fill.FillColor: 255,255,255

DefaultSize: 0,21,129,92

Font.Size: 10

Line.LineColor: 111,0,107

**System\_Border**

Properties:

Line.LineWidth: 1

Font.FontColor: 0,0,0

Font.Font: Arial

Fill.FillColor: 255,255,255

DefaultSize: 0,0,228,240

Font.Size: 10

Line.LineColor: 111,0,107

**Flow**

Properties:

Line.LineWidth: 0

Font.FontColor: 0,0,128

Font.Font: Arial

Line.LineStyle: 1

Font.Size: 10

Line.LineColor: 0,112,0

**Association**

Properties:

Line.LineWidth: 1

Font.FontColor: 0,0,128

Font.Font: Arial

Font.Size: 10

Line.LineColor: 221,0,0

**MainGateSecurity**

****

**Overridden Properties**

Subjects:

**Format**

Metaclasses:

**Actor**

Properties:

Line.LineWidth: 1

Font.FontColor: 0,0,128

Font.Font: Arial

Fill.FillColor: 255,255,255

DefaultSize: 0,26,84,168

Font.Size: 10

Line.LineColor: 111,0,107

**UseCase**

Properties:

Line.LineWidth: 1

Font.FontColor: 0,0,0

Font.Font: Arial

Fill.FillColor: 255,255,255

DefaultSize: 0,21,129,92

Font.Size: 10

Line.LineColor: 111,0,107

**System\_Border**

Properties:

Line.LineWidth: 1

Font.FontColor: 0,0,0

Font.Font: Arial

Fill.FillColor: 255,255,255

DefaultSize: 0,0,228,240

Font.Size: 10

Line.LineColor: 111,0,107

**Flow**

Properties:

Line.LineWidth: 0

Font.FontColor: 0,0,128

Font.Font: Arial

Line.LineStyle: 1

Font.Size: 10

Line.LineColor: 0,112,0

**Association**

Properties:

Line.LineWidth: 1

Font.FontColor: 0,0,128

Font.Font: Arial

Font.Size: 10

Line.LineColor: 221,0,0

Activity

****

**Overridden Properties**

Subjects:

**Format**

Metaclasses:

**Action**

Properties:

Line.LineWidth: 1

Font.FontColor: 0,0,0

Font.Font: Arial

Fill.FillColor: 255,255,255

DefaultSize: 0,0,95,60

Font.Size: 10

Line.LineColor: 0,112,0

**DanglingTransition**

Properties:

Line.LineWidth: 2

Line.LineColor: 0,0,0

**State**

Properties:

Line.LineWidth: 1

Font.FontColor: 0,0,0

Font.Font: Arial

Fill.FillColor: 255,255,255

Line.LineStyle: 0

DefaultSize: 0,0,96,60

Font.Size: 10

Line.LineColor: 0,112,0

**ROOT**

Or-state

Substates:

vehicle\_security

Default Transition

Target:

vehicle\_security

**vehicle\_security**

Action State

EntryAction

char cmd = 0;

try

{

while (Character.isLetterOrDigit(cmd) == false)

cmd = (char)System.in.read();

}

catch (java.io.IOException e)

{

System.err.println("Exception while reading from console: " + e);

}

if (itsDisplay != null)

itsDisplay.gen(new evKeyPress(cmd));

Out Transition

Stereotypes:

ControlFlow

Target:

vehicle\_security

Events:

**evConnectionFind**

**evConnectionlost**

**evFillForm**

**evFinish**

**evGenerate**

**evGenerate\_VUID**

**evGetfeedback**

**evOpenForm**

**evRegister**

Flow Items:

**Card**

**UID**

**card**

**Uid**

Flows:

**Webmail Login\_Registration Form**

From Webmail Login to Registration Form

**Registration Form\_Vehicle UID**

From Registration Form to Vehicle UID

**.\_DataBase**

From . to DataBase

**DataBase\_.**

From DataBase to .

**Vehicle UID\_student**

From Vehicle UID to student

**Student\_.**

From Student to .

Conveyed

Card : FlowItem

**.\_Student**

From . to Student

Conveyed

UID : FlowItem

**Vehicle DataBase\_.**

From Vehicle DataBase to .

**Student\_Vehicle\_UID**

From Student to Vehicle\_UID

Conveyed

card : FlowItem

**Vehicle Description\_Student**

From Vehicle Description to Student

Conveyed

Uid : FlowItem

**Vehicle\_UID\_Vehicle Description**

From Vehicle\_UID to Vehicle Description

**Vehicle Description\_Vehicle DataBase**

From Vehicle Description to Vehicle DataBase

**Vehicle UID\_DataBase**

From Vehicle UID to DataBase

**DataBase\_Vehicle UID**

From DataBase to Vehicle UID

Associations:

**DB\_Access**

End1: itsDataBase, Multiplicity of 1

End2: itsVehicle Management, Multiplicity of 1

**FormAccess**

End1: its., Multiplicity of 1

End2: itsStudent, Multiplicity of 1

**ManageApp**

End1: its., Multiplicity of 1

End2: itsVehicle Management, Multiplicity of 1

**VehicleUID**

End1: itsStudent, Multiplicity of 1

End2: itsVehicle UID, Multiplicity of 1

Globals:

Classes:

**display**

Operations:

**evFillForm**

Reception

**evProcessForm**

Primitive-operation , Public, Return type is void

**itsKeyReader**

**Vehicle\_Registration**

Objects:

**card:Card**

Implicit, Multiplicity of 1

**student:Student**

Implicit, Multiplicity of 1

Operations:

**evFillForm**

Reception

**evRegister**

Reception

**Generate\_VUID**

Primitive-operation , Public, Return type is void

**Get\_student\_info**

Primitive-operation , Public, Return type is void

Attributes:

**Dscription**

Type of char, Public, Multiplicity of 1

**Registraion\_Id**

Type of int, Public, Multiplicity of 1

Statechart

****

**Overridden Properties**

Subjects:

**Format**

Metaclasses:

**StateChartConditionConnector**

Properties:

Line.LineWidth: 1

Font.FontColor: 0,0,0

Font.Font: Arial

Fill.FillColor: 152,158,231

DefaultSize: 0,0,25,23

Font.Size: 10

Line.LineColor: 0,0,0

**DanglingTransition**

Properties:

Line.LineWidth: 2

Line.LineColor: 0,0,0

**State**

Properties:

Line.LineWidth: 1

Font.FontColor: 0,0,0

Font.Font: Arial

Fill.FillColor: 255,255,255

Line.LineStyle: 0

DefaultSize: 0,0,96,60

Font.Size: 10

Line.LineColor: 0,112,0

**ROOT**

Or-state

Substates:

Vehicle\_registration

**Vehicle\_registration**

Or-state

Out Transition

evFillForm

Condition Connector

Branches:

[params.key=='validated']/itsform.genwevGenerate());

Target:

Vehicle\_registration

[params.key=='error']/itsVehicleSecurity.gen(newevFillagain()];

Target:

Vehicle\_registration

[params.key=='X']/System.exit());

Target:

Vehicle\_registration

**Vehicle\_Security\_App**

Objects:

**CardNo**

Implicit, Multiplicity of 1

Operations:

**evConnectionFind**

Reception

**evConnectionlost**

Reception

**evFinish**

Reception

**evGenerate**

Reception

**evGenerate\_VUID**

Reception

**evGetfeedback**

Reception

**evOpenForm**

Reception

**evProcessCardNumber**

Primitive-operation , Public, Return type is void

**Generate\_VUID**

Primitive-operation , Public, Return type is void

**Get\_Details**

Primitive-operation , Public, Return type is void

Attributes:

**cardNo**

Type of int, Public, Multiplicity of 1

**Description**

Type of char, Public, Multiplicity of 1

**Uid**

Type of int, Public, Multiplicity of 1

Statechart

****

**Overridden Properties**

Subjects:

**Format**

Metaclasses:

**DiagramConnector**

Properties:

Line.LineWidth: 1

Font.FontColor: 0,0,0

Font.Font: Arial

Fill.FillColor: 152,158,231

DefaultSize: 0,0,55,24

Font.Size: 10

Line.LineColor: 0,0,0

**HistoryConnector**

Properties:

Line.LineWidth: 1

Font.FontColor: 0,0,0

Font.Font: Arial

Fill.FillColor: 152,158,231

DefaultSize: 0,0,25,23

Font.Size: 10

Line.LineColor: 0,0,0

**DanglingTransition**

Properties:

Line.LineWidth: 2

Line.LineColor: 0,0,0

**State**

Properties:

Line.LineWidth: 1

Font.FontColor: 0,0,0

Font.Font: Arial

Fill.FillColor: 255,255,255

Line.LineStyle: 0

DefaultSize: 0,0,96,60

Font.Size: 10

Line.LineColor: 0,112,0

**ROOT**

Or-state

Substates:

appClosed

internet\_connection\_lost

User\_Registration

Default Transition

Target:

appClosed

**appClosed**

Or-state

Out Transition

evOpenForm

Target:

User\_Registration

**internet\_connection\_lost**

Or-state

Out Transition

evConnectionFind

Target:

History Connector

**User\_Registration**

Or-state

Substates:

Feedback

Generate\_VUID

Get\_Details

Out Transition

evConnectionlost

Target:

internet\_connection\_lost

Default Transition

Target:

Get\_Details

**Feedback**

Or-state

Out Transition

evFinish

Target:

finish

**Generate\_VUID**

Or-state

Out Transition

evGetfeedback

Target:

Feedback

**Get\_Details**

Or-state

Out Transition

evGenerate

Target:

Generate\_VUID

**finish**

Diagram Connector

**finishRegistration**

Diagram Connector

Out Transition

Target:

appClosed

Actors:

**MainGateSecurity**

Association Ends:

**its.**

Association with ., Multiplicity of 1, Bi-directional, Navigable

**student**

Association Ends:

**its.**

**FormAccess**

Association with ., Multiplicity of 1, Bi-directional, Navigable

**itsVehicle UID**

**VehicleUID**

Association with Vehicle UID, Multiplicity of 1, Bi-directional, Navigable

**Student**

**Vehicle Management**

Association Ends:

**its.**

**ManageApp**

Association with ., Multiplicity of 1, Bi-directional, Navigable

**itsDataBase**

**DB\_Access**

Association with DataBase, Multiplicity of 1, Bi-directional, Navigable

Use Cases:

**.**

Association Ends:

**itsStudent**

**itsVehicle Management**

**itsMainGateSecurity**

**DataBase**

Association Ends:

**itsVehicle Management**

**Registration Form**

**Vehicle DataBase**

**Vehicle Description**

**Vehicle UID**

Association Ends:

**itsStudent**

**Vehicle\_UID**

**Webmail Login**

Object Model Diagrams

**Model1**

****

**Overridden Properties**

Subjects:

**Format**

Metaclasses:

**Class**

Properties:

Line.LineWidth: 1

Font.FontColor: 0,0,0

Font.Font: Arial

Fill.FillColor: 255,255,255

Line.LineStyle: 0

DefaultSize: 0,34,84,148

Font.Size: 10

Line.LineColor: 121,122,0

Components

DefaultComponent

Language: C++

Component Settings:

Build type: Executable

Configurations:

**DefaultConfig**

Scope type: Explicit

Instrumentation type: None

Time-model type: Real-time

Statechart generation type: Flat

Files and Folders:

**ER DIAGRAM:** **VEHICLE SECURITY APP**

**ER DIAGRAM 1:-**

**Registration Form**

**Fills**

**Student**

**Vehicle DB**

**Generates**

**ER DIAGRAM 2:-**

**DISPLAYS**

**VEHICLE INFO**

**VEHICLE DB**