**Subject:** Object Oriented Programming


**NRC:** 2858


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**Subject:** Recognition of Plates

# Contenido

# General objective

- Develop a machine vision system, using object oriented programming, to identify the text in an image.

# Specific Objectives

- Define the process of an image, knowing its parameters and dimensions, to recognize and establish its measures and content.
- Distinguish the images entered, with the loading or uploading of images, to know the type of image processing

# Theory

## Definition

The system establishes an image treatment which can be treated and sized, in order to understand the text that composes taking as an example a car plate, which we can determine that plate is and this text can treat and programming language can understand and go to a string.
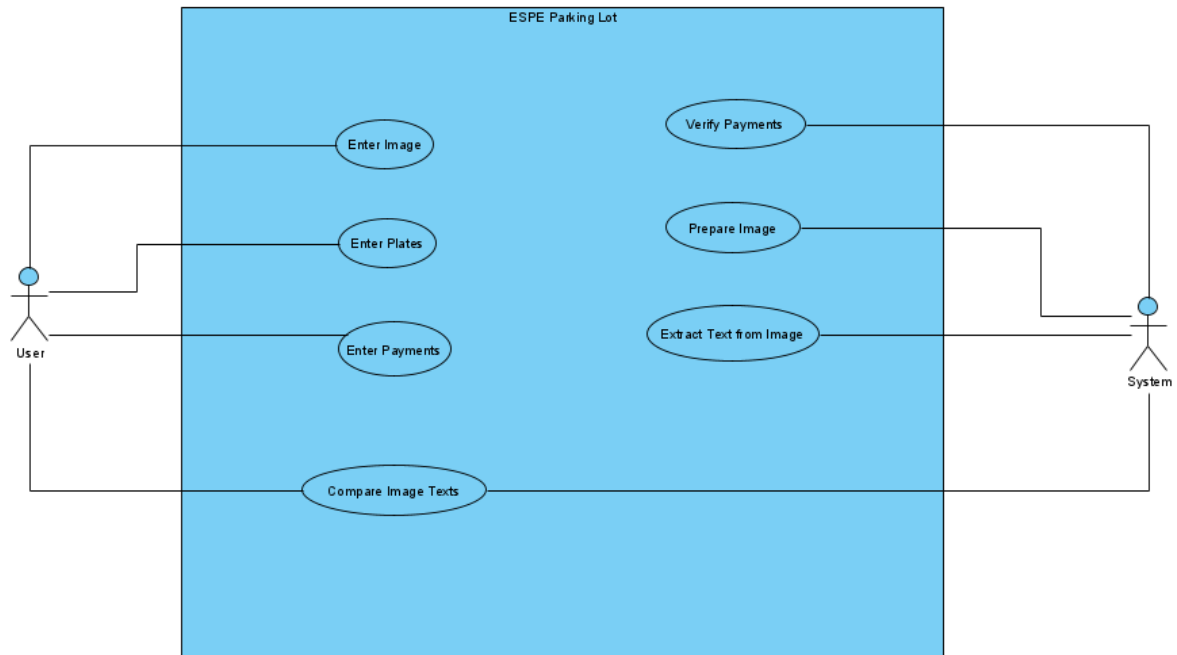
## Problem

An image is known which cannot be interpreted by the machine and its text is not perceptible by the programming language and this can be used or treated as a text string.

## Solution

It is to establish a system in which it contemplates the use of programming oriented to objects, to be able to determine or to read the text that an image has in case of an image of the plates of a car this will determine the text to be able to be treated and to be interpreted by the machine.

# Use case diagram

## ESPE Parking Lot

Use case diagram: User — Enter Image, Enter Plates, Enter Payments, Compare Image Texts. System — Verify Payments, Prepare Image, Extract Text from Image, Compare Image Texts.

# UML Diagram

**Image**
- -Id : Int
- -imageHigh : float
- -imageWidth : float
- -imageX : float
- -imageY : float
- -imagePath : string
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- +saveImage() : void
- +loadImage() : void
- +cutImage() : void
- +grayScaleImage() : void

**Plates**
- -Id : Int
- -description : string
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- +insert() : void
- +delete() : void
- +update() : void

**Payment**
- -Id : Int
- -idPlates : Plates()
- -cost : float
- -dateInitial : date
- -dateFinished : date
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- +insert() : void
- +deleted() : void
- +update() : void
- +calculated() : boolean

**ImageString**
- +extractString(idPlates : Plates(), idImage : Image()) : String
- +comparateString(idPlates : Plates(), idImage : Image()) : String