

PROJECT PART2

GAS STATION PUMP

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Barbara Maweu	bmk101020@utdallas.edu
Ronaldo Goncalves Junior	rxp152830@utdallas.edu
Ramakrishnan Sathyavageeswaran	rxs142530@utdallas.edu
Twinkle Sharma	txs151730@utdallas.edu

For this deliverable, our team developed the domain model associated with the gas station pump system. Our team explored as many use cases as we could, as well as devising the respective supplementary specification.

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Domain Diagram

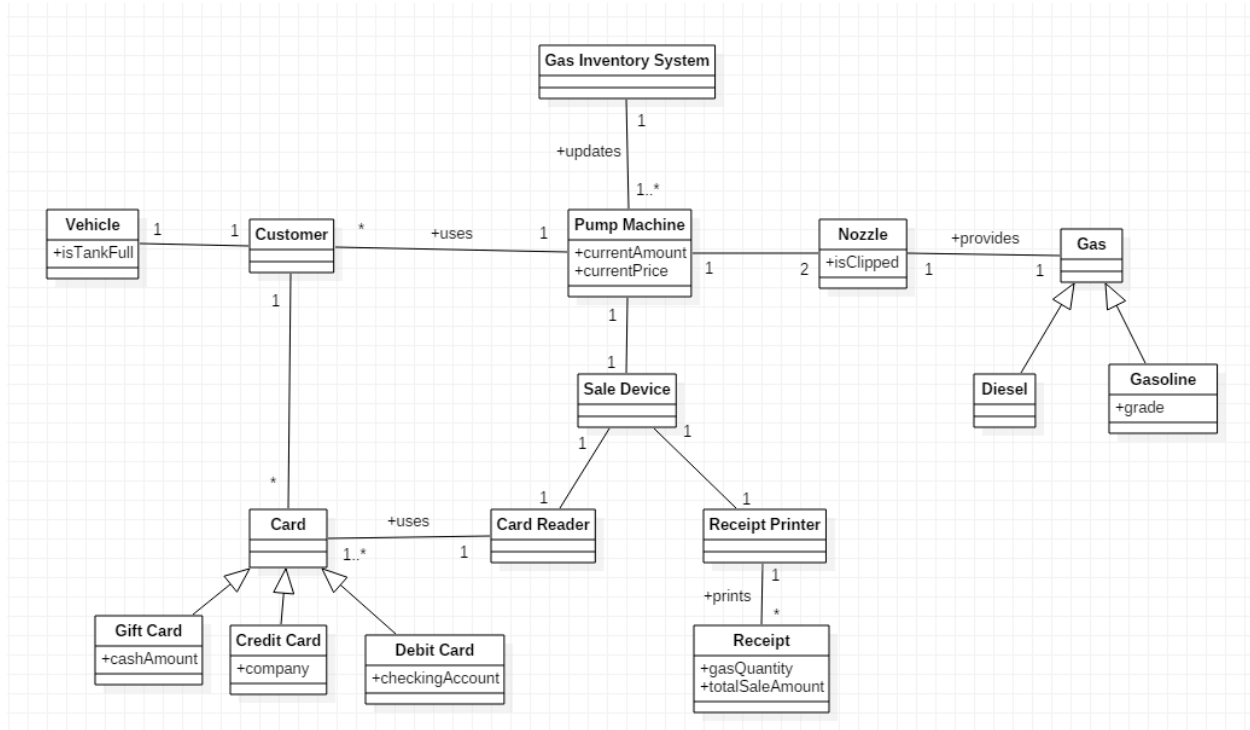


Figure 1: Domain Diagram for the Pump Control System

Supplementary Specification

Definitions, acronyms, and abbreviations

Sale Device	Comprised of Display and Keypad, used to show messages and to provide means of input to the pump machine customer, respectively.
Grade	Method for measuring the quality of gasoline. There are three predefined values: 87, 89, and 93. The higher the number, better is the quality.
Gift card	Alternative to the traditional debit/credit cards. This card stores an amount of money which can be used towards buying gas, until it runs out of funds.
Clip	Trigger located within the nozzle, which is used to activate automatic flow of gas into the vehicle's tank. It functions as it would if the customer maintained the nozzle activated.
Gas Inventory	External system that provides updated gasoline and diesel prices. It is also responsible for logging authorized payments, gas sale transactions and available amount of gas.
PMS	Pump Machine System
UCD	Use Case Diagram
DCD	Design Class Diagram
N/A	Not applicable

External Interface Requirements

User Interfaces

The user interface for the PMS shall be user-friendly, making extended use of buttons and indicators to aid the user.

Hardware Interfaces

The system shall connect to an external bank system for tax calculation and gas inventory system to maintain sales. The interfaces which uses this connection will be the hardware interfaces of the PMS.

Software Interfaces

The system shall communicate with the sale device.
The system shall communicate with the bank system protocol.
The system shall communicate with the gas inventory system.

Software System Attributes

Adaptability

The system shall be able to detect whether the customer is performing card or cash payment and adapt to these changes.

User-friendliness

The system shall make extended use of lights to enhance the usage of the buttons.

Understandability

The system shall maintain visible button lights in all lighting conditions.

The system shall use legible fonts while maintaining a clear view of all displays from a 0.5-meter distance.