**Property class**

System Requirements:

Congratulations! Your software company TaxIrelandSolutions Ltd has won the contract

from the Department of Environment to develop a Property Charge Management System.

The system will allow property owners to register each of their properties and to pay the

property tax due for the properties.

Property tax is a yearly tax on a property and it is due to be paid on Jan 1st each year.

Property owners should be able to view a list of their properties and the tax that is due currently per property and also any overdue tax (hasn’t been paid for a previous year) and be able to query specific previous years and get a

balancing statement for any particular year or property.

The system should maintain a record of all payments of the property charge on a yearly basis. All records should be

held in csv files.

A property must be registered on the system before the property tax can be paid.

A property owner can register a property.

The following information must be recorded for a

property:

• Property owner(s)

• Address

• Postcode/Eircode

• estimated market value

• location category (City/Large town/Small town/Village/Countryside)

• Principal private residence (yes/no)

The property tax is calculated based on the following combinations:

• a fixed cost of €100

• a market value tax based on the following rates:

Property Value Rate

Up to 150,000 0

150,000 - 400,000 .01%

400,001 - 650,000 .02%

Above 650,000 .04%

• a location category tax based on the following rates:

Location Charge

City €100

Large town €80

Small town €60

Village €50

Countryside €25

• An additional flat charge of €100 if the property is not the principle private

residence of the owner.

• Apply a 7% penalty, compounded for each year that a property tax is unpaid.

A property owner will be able to query the system to view payments made for all their

owned properties.

The property tax management system will also provide management functionality for the

Department of Environment. The management should be able to do the following:

• Get property tax payment data for any property

• Get property tax payment data for any property owner

• Get a list of all overdue property tax for a particular year (with the option to select

an area based on the routing key of the Eircode (see

https://www.citizensinformation.ie/en/consumer/phone\_internet\_tv\_and\_postal\_s

ervices/eircode.html#:~:text=An%20Eircode%20is%20a%20unique,3%20charact

ers%20of%20an%20Eircode.) )

• Get property tax statistics for a particular area based on the routing key of the

Eircode (e.g. total tax paid, average tax paid, number and percentage of property

taxes paid).

• Investigate the impact of possible changes to the rates and levies contributing to

the property tax to determine how the revenue collected would change.

**Potential classes and data fields:**

DF= Data Field

M= Possible methods

**Possible classes:**

-Property

DF-Location

DF-Property owner

DF-Double estimated value

DF-Boolean principal residence

-Properties

-PropertyTax

-Payment

DF- double balance

2 array lists: 1 logs payment, one logs overdue tax?

-User(interface)

DF - String username, password

M - set/get

-Property owner – based on User

-Administrator – based on User

M - add owner, add manager ,login(username, password)

DF -

-Property tax

DF Constant double fixedCost

DF double[] marketValueTaxList

Double marketValueTax

DF Double[] locationTaxList

Double locationTax

DF Boolean flatCharge

DF Double penalty

M Setters and getters:

SetMarketValueTax

GetMarketValueTax

SetLocationTax

GetLocationTax

SetFlatCharge

getFlatCharge

-Address

- String location type

-String address

DF -firstLine, secondLine, city, county, country

M- get/set for all the DFs , toString method

-String eircode

If you need to operate on an object and extract other information from it and it needs to perform more complex tasks. Then maybe we need a class to represent the object. If its fairly simple just a value, then maybe a primitive type would be sufficient to represent it.

**CRC DIAGRAM**

**Property**

Address

Eircode

Location

Principle Private Residence

Property Owners

Stores Property tax Tax calculator

Record of payments made on the property Owner

Balance statement for any property

**Payment**

knows property property

knows property owner

stores amount paid

date of payment

**Owner**

View list of their properties

Pays tax

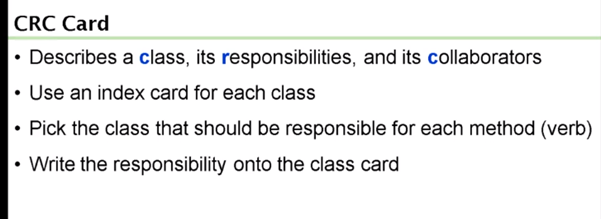
Register a property

View balance statement

**Property tax**

Calculates tax for each property

Overdue tax



|  |  |
| --- | --- |
| Address |  |
| Store name of the firstLine of the address |  |
| Store name of the secondLine of the address |  |
| Store City name |  |
| Store County name |  |
| Store country name |  |
| Return Address | Property |
|  |  |

|  |  |
| --- | --- |
| Class name: PropertyTax | |
| FixedCost (Attribute) |  |
| MarketValueList (Attribute) |  |
| LocationTaxList (Attribute) |  |
| MarketValueTaxRate (Attribute) |  |
| MarketValueTaxRate (Attribute) |  |
| GetlocationTax (Method) |  |
| PropertyTax (Method) |  |
| SetMarketValueTax (Method) | property |
| SetLocationTax (Method) |  |
| GetMarketValue (Method) |  |
| SetTaxDue (Method) |  |

|  |
| --- |
| Class name: property |

|  |  |
| --- | --- |
| address(attribute) |  |
| Postcode (Attribute) |  |
| Location (Attribute) |  |
| PropertyOwner (Attribute) |  |
| PrincipalResidence (Attribute) |  |
| estimatedMarketValue (Attribute) |  |
|  |  |
|  |  |