

APPLIED DATA SCIENCE CAPSTONE PROJECT
WEEK 2

RECORD OF PROTECTED STRUCTURES
GALWAY COUNTY COUNCIL

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Introduction

A protected structure is a structure that the Planning Authority considers to be of special interest from an architectural, historical, archaeological, artistic, cultural, scientific, social or technical point of view. The Planning Authority in its Record of Protected Structures (RPS) includes details of protected structures. A Record of Protected Structures is the record included in a Development Plan, correct at the time of publication. It may be amended by the addition or deletion of entries independently of the Development Plan review process.

[source](<https://data.gov.ie/dataset/record-of-protected-structures1/resource/de1217cb-5c97-434c-8b05-2114967f642c>)

As it was clearly stated in first paragraph 'Protected structures' are considered to be of special interest for local government and community. They have architectural, historical, archeological, artistic, cultural, scientific, social or technical value. These structures in further text I will call Cultural heritages.

According to [WIKIPEDIA](https://en.wikipedia.org/wiki/Cultural_heritage) 'Cultural heritage is the legacy of physical artifacts and intangible attributes of a group or society that is inherited from past generations. Not all legacies of past generations are "heritage", rather heritage is a product of selection by society.'

As such these Structures does not just represent rich history and cultural achievements of one nation, group of people or single person, they also inform us about lot of aspects of life from one time, interconnectivity, influence from other nations, struggle one been through. They are keepers of one nation past and history but also enrichment for others.

In today's societies in time of globalization, will of one to get know better others is highly valued. These needs 'to get know and see others', that are common to all human beings, are primarily satisfied through traveling. Tourism is highly appreciated brunch of industry of any country. It brings revenue but is also beneficial for other industries such as agriculture, small local retail shops, hotels, restaurants museums and other so called tertiary activities.

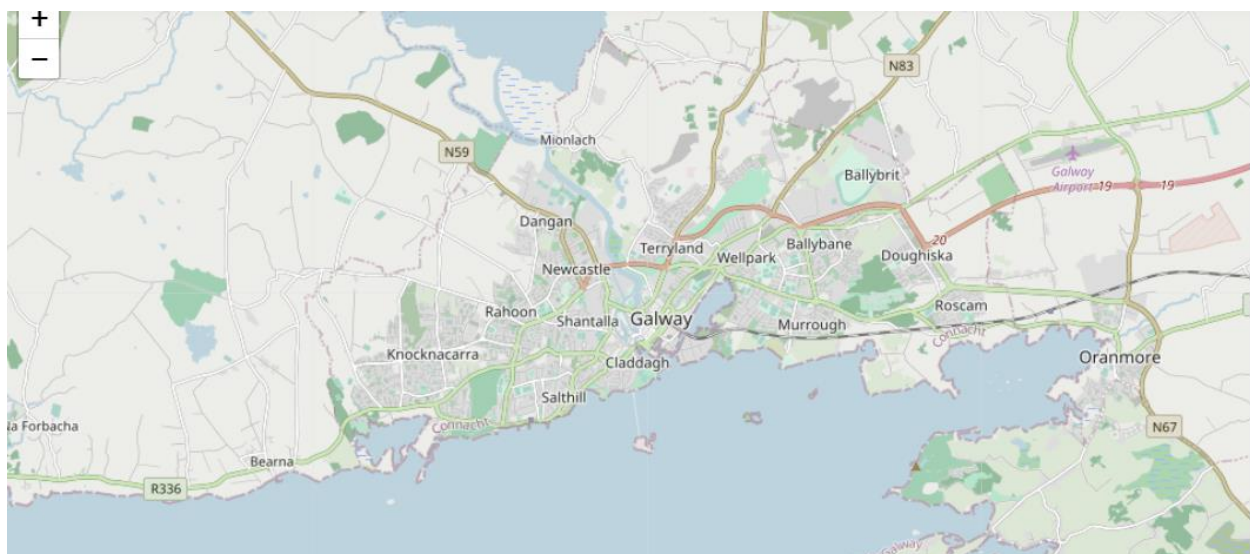
It has its bad sides as well, such as overcrowding, waste and noise and it should be addressed properly by responsible, such as Tourist agencies and domestic governments in order to minimize these negative impacts on local communities as well as tourists.

Ireland is beautiful green island in the North Atlantic Ocean. It is divided on Republic of Ireland and Northern Ireland which is part of United Kingdom. It is noted for a rich cultural heritage and tradition that is mainly linked to Gaelic language. Ireland is home for 6.4 million people. The island is considered 20-th largest in the world and encompasses 84.421 squared kilometers.

- It is home to numerous castles,
- Irish people speak English but also Irish which is Gaelic language,
- St. Patrick is worldwide known Irish saint,
- Shamrock 🍀 and leprechauns are integral and well-known part of Irish tradition,
- Guinness beer best known Irish beer in world,
- It has oldest known pub 900 years old,
- Ireland has been inhabited approximately 7000 years,

are some of interesting facts about Ireland. [source](<https://nationfacts.net/ireland-facts/>)

Galway County Ireland, map:



Problem

Apart from well-known and worldwide recognized cultural, natural and historical treasures of Ireland, that bring every year a numerous tourist from around the world, there is a question how much of these are still hidden, or properly represented and offered as tourist attractions.

In this notebook I will try to give an answer to this question for Galway County.

I will go through Record of Protected Structures in Galway County Ireland in order to see how much of them are still in use and their impact on local tourism.

Data acquisition and preparation

Data that will be used in this project are acquired from Ireland's open data portal (<https://data.gov.ie/>). It holds more than 10000 datasets divided between different sectors.

Data set used in this project contain information about protected structures in Galway County provided by Galway County Council. Information such as name and type of structure, address, geocoordinates, date and identification number, current use, description, appraisal are ready to use.

In order to extract and provide answer on actual treatment and inclusion in today tourist prospects of Galway county they need to be slightly cleaned, and prepared for further use.

This means that some columns for this project will not be needed some have to be combined with different sources such as Foursquare app.

Complete dataset can be found here (<https://data.gov.ie/dataset/record-of-protected-structures1>)

	Building_Name	Address	County	Building_Type	Description	Appraisal	Current_Use	Date_Registered	Latitude	Longitude	OBJECTID
0	Thatched Cottage	Ballycleary Kinvara Co. Galway	County Galway	Thatched structure	Detached 4 bay , single storey thatched cottage.	traditional roof, and traditional setting.	dwelling	1970/01/01 00:00:00+00	53.154390	-8.91107	3031
1	Windfield House.	Newbridge Ballinasloe Co Galway	County Galway	House	Detached 3 bay, single storey over basement ho...	House which retains original features in inter...	NaN	1970/01/01 00:00:00+00	53.505061	-8.46177	3032
2	Cregg Mills	Corrandulla GALWAY	County Galway	Mill house	DECLARATION Five-bay four-storey mill building...	DECLARATION Although devoid of machinery the b...	dwelling	2002/11/18 00:00:00+00	53.386900	-8.97269	3033
3	O'Dea's Hotel	Bride Street Loughrea Galway	County Galway	Hotel	DECLARATION 11/6/2014 Late 18th century 7 bay...	DECLARATION 11/6/2014 The building is of regi...	hotel	2005/10/25 00:00:00+00	53.199130	-8.56517	3034
4	L O' Brien	Main Street Loughrea Galway	County Galway	House	Large 5 bay 3 storey late 18th century house	NaN	NaN	2005/10/26 00:00:00+00	53.198660	-8.56860	3035

After the first glimpse into the data frame, it was obvious that there were columns unnecessary for further examination. That is why they have been dropped, and here is represented dataset with necessary datapoints. There was 1514 rows and 20 columns. Building name, Appraisal, Current Use, RMP number miss data, although for 'Current_Use' column we can assume that represents data about structures that are currently in use while rest is not.

According to this dataset there is a 108 different Building Types. Some of them with actual number are shown below.

House	373
Church	160
Bridge	152
Thatched structure	152
School	40
Monument	34
Railway bridge	33
Unknown	31
Waterpump	31
Gate lodge	31

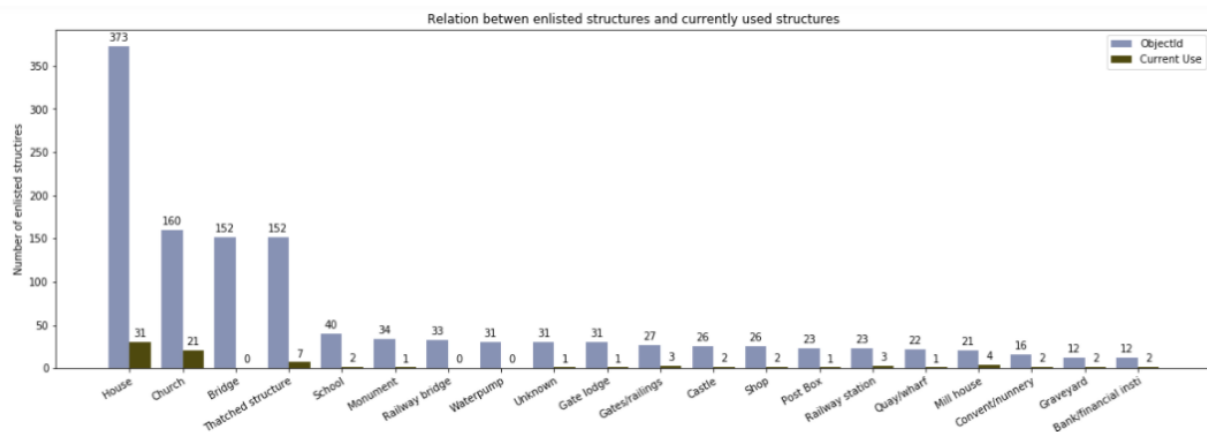
And those still in use are also represented.

dwelling	20
house	9
place of worship	8
church	7
hotel	6
ruin	6
derelict	4
vacant	3
House and Shop	2
unused	2

Since OBJECTID uniformly designates every protected unit, regardless of missing data in other columns based on it can be determined number of currently used buildings enlisted in register of Protected structures.

Building_Type	Current_Use	OBJECTID
House	31	373
Church	21	160
Bridge	0	152
Thatched structure	7	152
School	2	40
Monument	1	34
Railway bridge	0	33
Waterpump	0	31
Unknown	1	31
Gate lodge	1	31
Gates/railings	3	27
Castle	2	26
Shop	2	26
Post Box	1	23
Railway station	3	23
Quay/wharf	1	22
Mill house	4	21
Convent/nunnery	2	16
Graveyard	2	12
Bank/financial insti	2	12

Graphical representation of data from previous table



Methodology

The main idea behind this project is to compare data from two different sources. One of them is dataset acquired from Record of protected structures and the second one will be acquired from Foursquare.

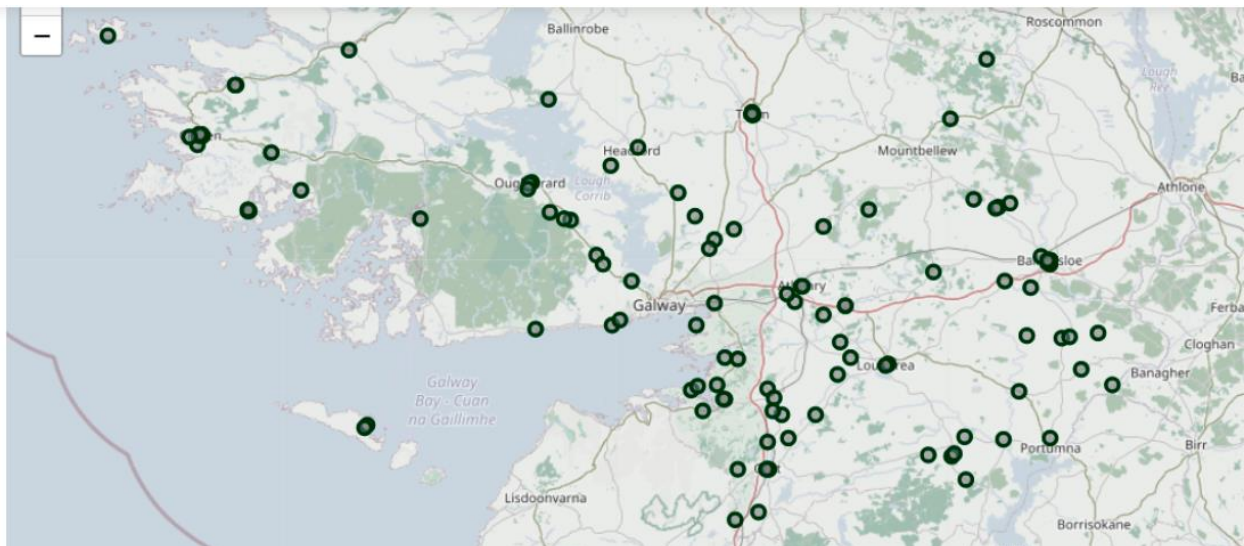
Foursquare is worldwide recognized location platform that holds information about venues around the world. After visiting venues travelers leave information such as pictures, opinions, likes and dislikes or anything else they find informative for other users.

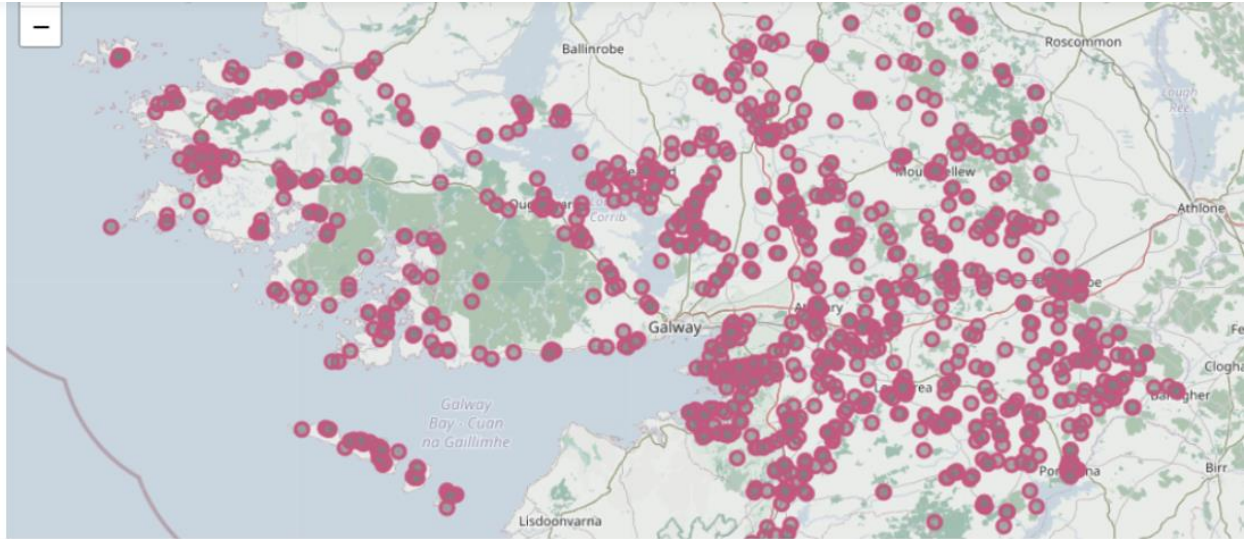
The both sets should be cleaned and prepared for further use aka comparison.

In the first step the dataset about Protected structures should be cleaned and graphically represented in order to make a clear picture about all registered structures.

In the second step data for given geocoordinates that represent Galway County will be pulled out from Foursquare website prepared for further use - represented as data frame, and then based on common address or geocoordinates comparison will be made.

Map of Galway County with marked currently in use structures is shown below, followed by map of Galway with marked all protected structures in this County.





From these two maps is clearly visible drastic difference between *All Protected Structures* and those among them currently in use. There is obviously a great potential in representation of this richness through interesting stories and tours. Some of them also can have functional use different from that they have now, and their cultural, historical, or architectural value can be by this way utilized in more meaningful way.

As it was already said second step in this project is to pull data from Foursquare platform in order to make comparison with dataset acquired from Galway County Council. The results after comparison are as follows:

	Building_Name	Address	County	Building_Type	Description	Appraisal	Current_Use
0	Thatched Cottage	Ballycleary Kinvara Co. Galway	County Galway	Thatched structure	Detached 4 bay , single storey thatched cottage.	traditional roof, and traditional setting.	dwelling
1	Windfield House.	Newbridge Ballinasloe Co Galway	County Galway	House	Detached 3 bay, single storey over basement ho...	House which retains original features in inter...	NaN
2	Cregg Mills	Corrandulla GALWAY	County Galway	Mill house	DECLARATION Five-bay four-storey mill building...	DECLARATION Although devoid of machinery the b...	dwelling
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4	L O' Brien	Main Street Loughrea Galway	County Galway	House	Large 5 bay 3 storey late 18th century house	NaN	NaN

For comparison in this case address was used as merging base. Only 5 of all registered structures are found on Foursquare platform. Whether address or geocoordinates have been used for merging datasets we came up with the same five location common for both datasets. With slightly different order of datasets before merging based on geocoordinates we came up with this representation based on data from Foursquare platform.

	name	categories	Address_x	cc	city	country
0	The Browne Doorway	Sculpture Garden	Eyre Sq	IE	Galway	Ireland
1	Eyre Square	Plaza	An Fhaiche Mhór	IE	Galway	Ireland
2	Esquires Coffee	Coffee Shop	11 Eyre Square	IE	Galway	Ireland
3	Meyrick Hotel	Hotel	Eyre Sq	IE	Galway	Ireland
4	McGettigan's	Gastropub	9-11 Prospect Hill	IE	Galway	Ireland

Results and Discussion

After comparison has been made between two data frames we finally have some numbers and they goes like this:

- 1514 Registered protected structures according to dataset,
- 119 Registered protected structures currently in use,
- 5 only among them are enlisted in Foursquare.

Only 7.86% from those recorded are currently in use. And only 0.33% from all recorded structures are worldwide visible throughout the Foursquare platform.

Although the number of currently used structures could be a higher than in dataset. The base for this assumption is grounded in results obtained by merging two datasets based on geocoordinates. Windfield House and L O'Brien House under the Current_Use column have NaN value for which I have made assumption that it means that these datapoints represent currently non used structures. Yet these Houses have appeared on Foursquare platform in category for Hotels.

Nevertheless it's fairly small number if we take into the account complete list of Recorded structures, and as it could have been seen the list is quite impressive.

Reason for so small number of Protected Structures, in some way included in tourism of Galway County, can be numerus. And they certainly must be investigated in order to improve tourist offer of County.

Conclusion

Although results have shown that fairly small number of structures enlisted as protected by Galway County Council, that as such possess certain historical, cultural, architectural value, are presented as Tourist attraction.

Lots of at first sight, interesting buildings are not. Their inclusion in tourist offer of County can be beneficial from many aspects and one of main is Economic aspect for County, as well as budget for their preservation also educational character they can have for all that decide to see them.

Those enlisted but not offered to a broader publicity represent potential that must be examined and included in Tourist prospects of County.

With broader offer came more people who in that case usually love to stay a day or two more, who need to eat and if it's a local food than there is more job for local restaurants as well as farmers. And this is not where chain is closed because these people live traces - comments and pictures about places they have visited and draw another to follow them.