**B&B Aggregator and Review**

**Platform**

**By,**

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**1.Introduction**

**1.1 Background and Case Study**

Bed and Breakfast is the backbone of the Irish hospitality sector. One can find B&B accommodation in the areas where there is no hotels or other types of accommodations available (What is a Bed and Breakfast - The Irish B&B Owners Association, 2015). It is estimated that overseas tourist contributes to bulk demand of B&B accommodation estimated around 4 million-night stays in the year 2013 which resulted in generating approximately 1230 euros per B&B owners. The Bed and Breakfast business in Ireland is the most important secondary source of income for most of the families who are running B&B businesses since a long time. The Irish B&B sector due to its small scale characteristic and family managed business has hit hard by hospitality revolution and impact of online booking platforms.(‘BBI\_Report\_final.pdf’, July 2014). There are three major bed and breakfast associations currently operating in Ireland which provide bookings and B&B accommodation facility to the customers namely B&B Ireland, Bed and Breakfast owners associations and Family homes of Ireland. But after the great recession in 2008 a sharp decline has been witnessed with the occupancy levels in B&B industry dropping from 66 percent to mere 60 percent (Chill winds of recession close some hotel doors, 2008). Another major reason for the footfall of the bed and breakfast industry in Ireland is due the paradigm shift in the market in the 2000 by the introduction of disruptive technologies like OTA’s online travel booking facilities such as Airbnb, Trivago etc.(‘BBI\_Report\_final.pdf’, 2014).

A classic example of how information systems can be used to reduce the footfall in the bed and breakfast industry is AirBnb. AirBnb provides an online platform for online booking and other management functions of the B&B’s. The quality of service is the main reason why AirBnb is worth more than 38 billion dollars. But Airbnb has its own standardization policies and requirement to which all enrolled B&B’s registered with them must adhere. Various measures has been taken like collaborative marketing and lowering the cost of online booking by removing the middleman by the current B&B associations in Ireland. Which resulted in the increased revenue and accessibility to many numbers of B&B units under one platform. However, there was no significant progress made due to low user interaction and footfall in the market.

**2.Approach**

A direct approach of developing an online platform to integrate services is considered for this project. Because of no business intend and non-transactional nature of the project. The project does not require any third-party validations. The developed project will be a web-based application designed to be compatible to run with common Linux servers. The web application might be hosted on any of the hosting servers or the project may be deployed on Microsoft azure.

The web application will include the following third-party integration.

1.Weather API for Climatic representation – Open Weather Map

2.Oauth 2.0 Authorization- Google authorization services have been used because of its free availability to it service users.

**3. Methodology**

By creating an online web application aggregating all B&B owners including unregistered B&B units, the platform becomes an aggregator of different business units and associations. This will allow the listing of B&B units under different associations in one platform, increasing the footfall. This increases the ease of browsing for the tourists as they have a detailed listing of all B&B services. Addition of this service intends in maximizing the user footfall.

The QoS (Quality of Service) is a very important factor and requires constant updating. Unlike Airbnb Inc. where common standardization can be enforced, the traditional B&B units have its own hospitality and maintenance standards. To help the tourists decide on the best possible B&B within budget, the platform will have reviews and comments from registered users. Preventing anonymous review posting and comments will ensure the users are genuine and hence the reviews will reflect the corresponding B&B’s QoS.

**4.Develpment Process**

**4.1 Requirement validation**

**4.2 Requirements**

Based on the requirement analysis below tasks are defined that determines the needs and condition to implement this project.

1. Development of an Administrative module to add/modify the B&B units in the portal.
2. Providing weather details of different counties in Ireland
3. Enabling Users to drop ratings and comments on individual B&B units.
4. Enabling Users to send queries directly to the B&B owners (SMTP).
5. Enabling anonymous review posting by using google OAuth to uniquely identify each user.

**4.3 Architectural Design**

Views

MySql DB

**Server**

**4.4 Web API**

Weather information of the selected places is added to the project so that users should be aware of the weather conditions of the locations where their B&B in located. Free weather API is used to display the real time weather information provided by Open Weather Map. The user can also filter the B&B’s using minimum and maximum temperature as an input to filter the data.

* Open Weather Map -API provider
* <http://api.openweathermap.org/data/2.5/weather>
* API Key: d828bc57d263d11b348eba143fa7c5c8

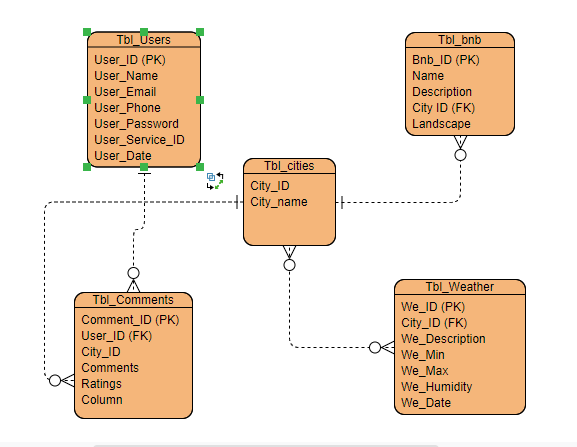
**4.5 Web Forms**

Web forms has been used to collect the user queries for any individual B&B and based on the email information of individual B&Bs which will be stored in the database. These queries will be emailed directly to the B&B owners or the corresponding person via email SMTP has been used send email. To avoid anonymous queries posting only registered and logged in users are allowed to send queries and to maintain the integrity of the queries information like (Name, Phone number, Email address) are shared over the email**.**

**4.6 Database Design**

The application has five main tables users table which will store data of all the registered users in the database it will hold user credentials such as ID, username, password, email address and contact details. Bnb table will hold data about all the bnb’s registered with the application like B&B details with city ID as the foreign key in the table. Comments table will hold data about the users comments and ratings on the B&B units and Users ID will be the foreign key in the table to identify the reviews. Weather table will store real time weather data received from the Open Weather map API.

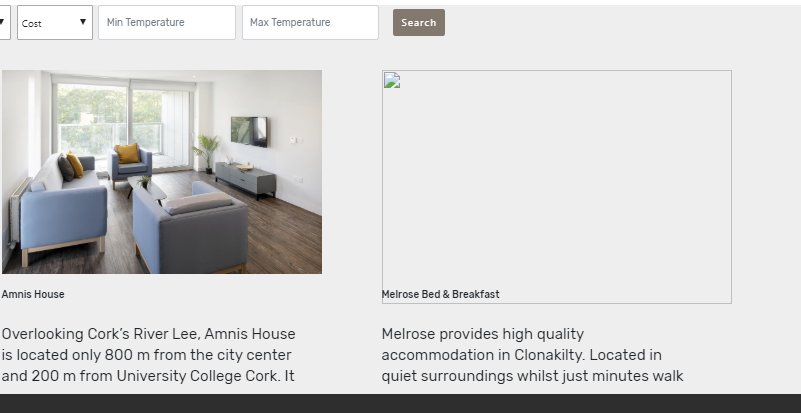
**ER diagram**



**4.7 Filtering B&B’s by Temperature values**

Users can filter B&B’s by using minimum and maximum temperature as input fields on the landing page and click search. The function “**fetch\_all\_bnb\_search\_datas**” will display those B&B units which falls under that temperature range using the stored temperature details from weather table in the database. Adding this filter to the application will help users to select B&B accommodation based on the current temperature of the location where the B&B is located. It will very helpful to the users because The climate of Ireland is mild, moist and uncertain with abundant [rainfall](https://en.wikipedia.org/wiki/Rainfall) and a lack of [temperature extremes](https://en.wikipedia.org/wiki/Temperature_extremes). [Ireland](https://en.wikipedia.org/wiki/Ireland)'s climate is defined as a [temperate](https://en.wikipedia.org/wiki/Temperate) [oceanic climate](https://en.wikipedia.org/wiki/Oceanic_climate).

User will input Minimum and maximum temperature range



**4.8 Admin Dashboard**

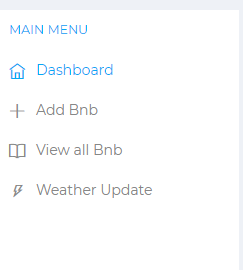
Link-<http://www.iebandb.co/admin/>

Credentials:

Username-Admin

Password-admin

We have also added admin module where admin can login using admin credentials mentioned above. Admin dashboard enables dynamic B&B listing where admin can register, Edit or remove any B&B units.



In the admin menu the weather update button [function weather\_update()] will fetch the current weather data and decode the JSON file into an array and stores the details in the database weather table.

4.9 Weather Line Chart

Line Chart Bootstrap template is used to show graph of the current as well as weather forecast for next few days for all the major cities in Ireland.

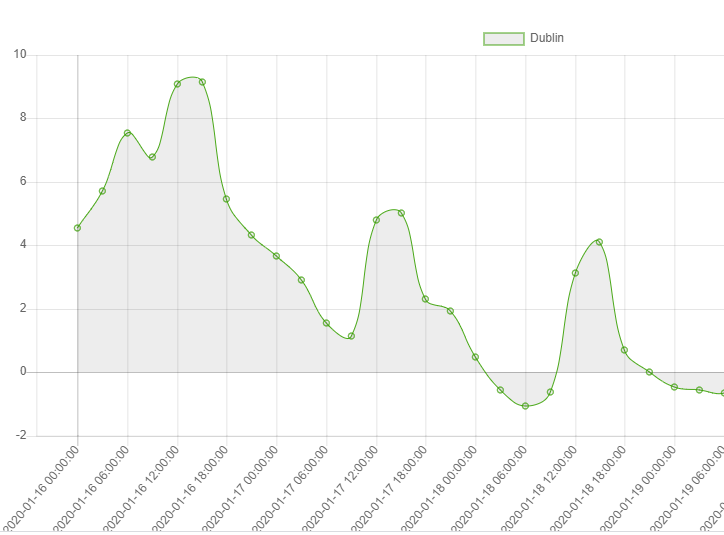


Figure shows temperature graph for Dublin with date and time. The free access of API will provide weather data in every 3 hours of interval. If the paid version is used we will get weather updates every 5 minutes by the API provider.