Dublin Business School

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Module Code: B9IS104
Module Description: Enterprise Information Systems
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Introduction

“There's nothing I like more than shooting in what you might call “real weather.” I always seem to be running out on the ship's deck or onto the street in the rain, sleet, and wind when everyone else is running for cover. Why? Because I know from years of experience that this is when the light really gets dramatic and the skies might open up with shafts of sunlight and dramatic clouds, giving me the opportunity to create photos with emotion and energy. Wind, snow, rain, fog—I love all the weather elements. They add texture and dimension to photographs.” - Cotton Coulson (Nationalgeographic.com, 2019). Just like this award winning Danish photographer, it is every professional photographers dream to track and shoot under natural circumstances. Apart from the adrenaline rush and photographic output it creates, it also contributes to the scientific communities in analysing patterns and other parameters of these natural phenomenons.

Jim Reed is an American photographer who has been capturing nature in his camera for nearly 3 decade, and his photographs are phenomenal records of global climatic change, a showcase of wrath, fury and beauty of nature (Jim Reed Photography - Extreme Weather, 2019). Photography of nature composes, in majority, randomly captured moments, with element of luck and chance playing the significant part. But for professionals like Reed, Coulson et al, the chance to obtain the most during a shoot are enhanced by the help of technology predictions accurate to great degree. A lot of sources are available to such professionals to stream-line their works rather than just rely on chance. Some of the most famous are Accuweather, Suncalc, national weather radar systems – National Radar Loop, Australia and Icelandic Met Office Radar, Aurora Alerts (for northern lights) and many more (The Wandering Lens - Travel Photography Guides, 2019).

Photography unlike other visual media captures a narrative in each click, and makes it one of the best memoir in anyone life, and hence has not lost any sheen even though there has been the advent of video media. Photography has multiple flavors for the taking - the likes of Fashion, Nature, Aerial, Adventure, Action & Sports, Animal, Event, Real Estate, Astronomy, Journalism, Medical & Micro-photography, Scientific, Food & Lifestyle, Vehicle, Travel, Advertisements, etc. Among them Nature and Adventure photography, holds a significant fan-base among the other, as humans were always awe-struck by nature and adrenaline. If nature & adventure photography were to have a common ground it would likely take the forms be extreme weather & extreme nature photography which could include volcanic photography, tidal wave photography, storm chasing, thunder & lightning capture etc.

This proposal is about putting together passion for photography along with availability of right tools for analysing the perfect weather condition to “chase a storm” for getting the perfect shot by designing a photo storage web interface with an integration of an alert system for tornadoes and thunderstorms integrating alert system and storage into single domain. The interface will cater to weather adventure photographers who are referred to as Storm-chasers. These people not only are photographers but share data with respective Meteorological departments to analyse weather patterns and conditions by near-proximity photography and storms.

2. Aims and Objectives

The aim of the work is to develop a web application that showcases the following information.

1. A photo gallery for storing thunderstorm pictures
2. A provision to upload new pictures into the gallery
3. Five day weather forecast through usage of weather APIs with city selection customization.
4. Option to mail the thunderstorm weather reports to custom email ID.

The main objective of the work:

1. To create and demonstrate usage of FTP through photo gallery uploaded.
2. To create and demonstrate the usage and implementation of web APIs.
3. To create and demonstrate the mailing functionality using SMTP, by sending the weather reports to custom email as entered by the client

3. Proposed Technologies

3.1 Programming language considered

The programming language considered for the implementation is PHP as it is relatively has lesser development and learning curve along with the advantage of being free and open source. Also the deployment compatibility of PHP based applications is higher in various server platforms.

3.2 Programming Framework

Codeignitor is one of the most used PHP framework, along with platforms like Laravel and Cake PHP. However the Cake PHP platform is now being less used due to its relatively old technology adaptation. This leads to selection between Laravel and Codeignitor. Since the learning curve of Laravel is significantly high, I have selected Codeignitor as the suited PHP platform for development of the application.

Codeignitor also is a lightweight platform with true MVC structure, having very good development support (Codeigniter.com, 2019).

3.3 Web API Selection

There are a numerous weather API’s already available in the market including paid and free ones. I have selected a free Open Weather Map API, which is in its pre-development phase (Openweathermap.org, 2019).

3.4 Other Development Technologies to be used

HTML5, Bootstrap, JavaScript, JQuery , CSS3, SQL, PHP Mailer.

4. Proposed Screens and data content

4.1 Home Page

The landing page or the home page the weather reports of the selected cities are displayed for the user to get immediate information about any nearby thunderstorms. Weather APIs are to used in obtaining these weather data.

4.2 Gallery

The second page is the gallery wherein the user can store the pictures of thunderstorms they have captured through a photo uploading provision.

4.3 Mail

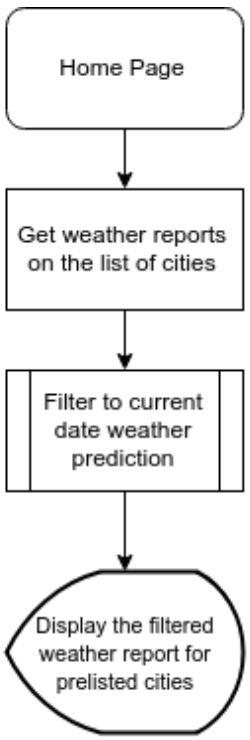
The third page is where the user can get the weather forecast of selected cities for the next 5 days. The user can either select email notification only if there is a possibility of thunderstorm as per weather prediction or send the full weather report irrespective of the chance of a thunderstorm.

4.4 SMTP

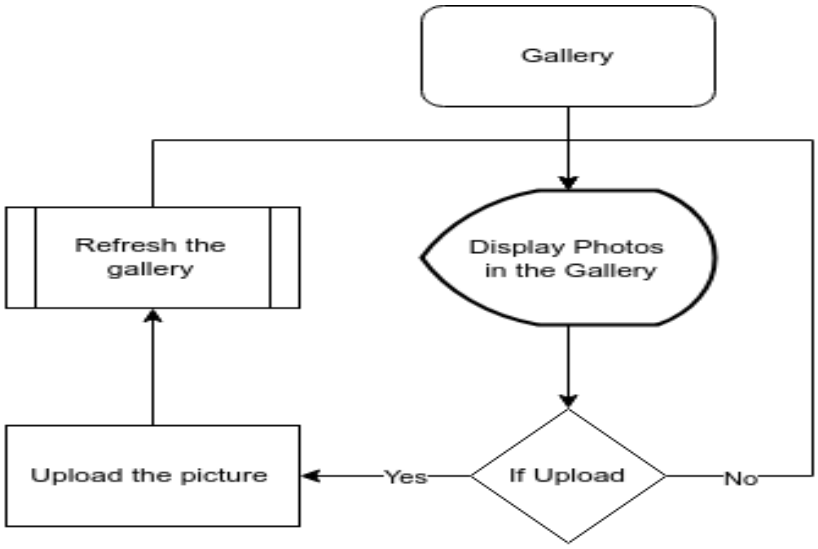
This fourth page is used for configuring the mail servers so that the email can be sent easily to any email with corresponding SMTP configuration. This avoids the requirement of a hard coded data which in turn maximises the flexibility of the application.

5. Functional Flow Diagram

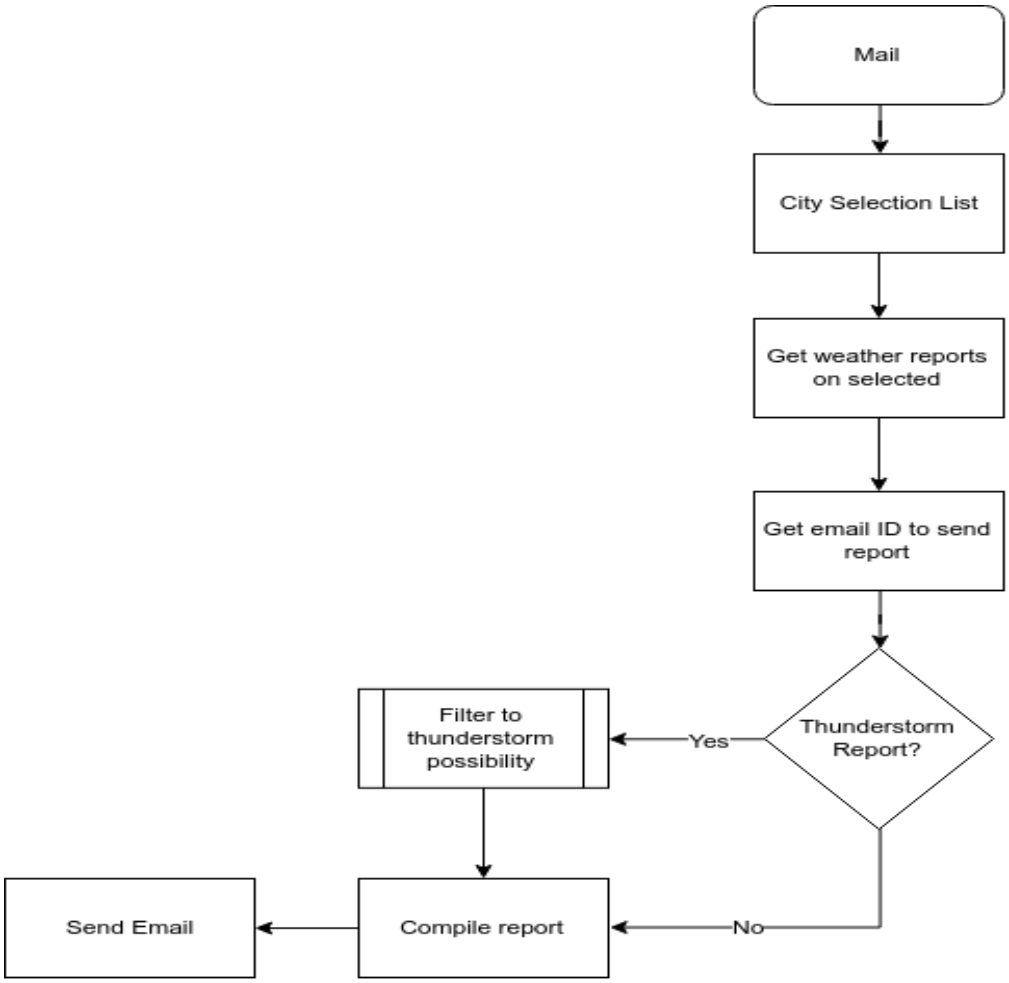
5.1 Home Page



5.2 Gallery



5.3 Weather report mailing



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