Chapter 1

Introduction

A lot of thought process goes into the development of any software which has teams of people working on a piece of software for months. The team of people working have to face a lot of problems, some of them being adjusting with each other, recognizing which part is done best by whom and so on. In order to give us a taste of all the difficulties of such a task under the course CSP 301 we were given a task of developing a site on the theme INCREDEBLE INDIA. The task was certainly quite an interesting one, one that gave us a feel of the task of actual software development. The task involved learning the use of diverse elements like the FLICKR API along with the GOOGLE API and combining all the elements.

It certainly was a big learning curve for our group. Even though we did face many difficulties ultimately the careful planning and the dedication of all the team members ensured that we were able to complete all our work. In the documentation we try and list the complete process that went into development of this website. Ranging from a HOW TO USE MANUAL to listing the difficulties we tried to present a complete picture of all the work that went into making the site into a complete structure. In the end all the group members felt that we needed to thank Prof. Anirban Mahanti for giving us this platform which helped us to work as a cohesive force and recognize the meaning of the word TEAM.
Chapter 2

Features Offered

This web application is an online service for touring Incredible India. It is aimed at providing information about important places of interest. Not only can visitors read and know more about these places, they can also see their relative positioning on Google maps and experience the beauty of India through a large number of photographs from Flickr services. It also suggests travel plans based on users preferences. To make touring more exciting visitors can also share their experiences through the forums on the web site.

Following is a detailed description of the features offered

2.1 Hot Destinations

On a Google Map, it marks latest top tourist spots of the country based on some ratings. A traveller can further explore any of these cities by just clicking on its marker, which shows complete information of the city including its rating, main attractions, reviews and a slide show of the photos of the city searched from Flickr.

2.2 Virtual Trip

As the name suggests, this feature provides the opportunity to the user to explore his trip on his computer. On a Google map showing all major cities, the user clicks on his starting city. Then by providing his interest, and the range of his travelling he will get all the cities, which matches both criteria, on a Google Map centred on his starting city. Now with just only a click he can explore any city for its rating, main attractions and experiences of the
past travellers to that city. Along these things, a slide show of the photos of that city searched from Flickr completes the Virtual Trip.

### 2.3 Plan My Trip

This feature offers user a trip on the basis of his travelling needs like his starting station, interests and the number of days he wants to travel. The offered trip is featured in an interactive manner on a Google Map, complete information of which is provided next to the map. It is further enhanced by providing individual city information which includes rating, main attractions of the city, reviews of other travellers who have visited the city earlier and a further link to view that city through its photos which are searched from Flickr and shown in a beautiful manner. The cities which are part of the trip are selected in decreasing order of their rating in the field of travellers interest and then, the whole trip is planned keeping in mind it doesnt exceeds total number of days.

### 2.4 Forums

Forums form an important part of the travel facilitation service as they allow users to interact with each other. Forums allow anonymous visitors to submit topics for discussion and communicate with each other using publicly visible messages. It facilitates users to post any query, share their experiences on some tour or city and create a bond of relationship among its users.

### 2.5 Standard tour packages, Help Desk and Others

Besides offering dynamically generated tours, some Standard Tour packages have also been included. Help desk and other general features have also been added.
Chapter 3

Design Choices

The Given Design Challenge which is stated in the starting of this document demanded that we frame a dynamic database driven website. Broadly this website should be able to portrait dynamic content on a webpage as well as give the user interactive input sessions. These challenges demanded some research which led to the following conclusion -

3.1 What Do We Need?

1. A server side scripting language that would process data on the request of the user.

2. A effective way of storing all the data which the website uses to output the results. In short a Database management System.

3. A query language to effectively retrieve, alter and add to the stored data in our database.

4. A interface to represent the output of the scripting language in the form of html.

5. A web server which is needed to host the website and to do all the computations needed to portrait the generated data on the basis of input received from the user.

3.2 Available Choices

Server Side Scripting Language

1. PHP (which we used) - It is a scripting language designed to produce dynamic web pages. It is widely
used and can be embedded into html. A big plus point of using PHP is that it can be used on most web servers and on almost every operating system. Apart from this it is a open source project.

2. JSP (Java Server Pages) - is a java technology that facilitates software developers to dynamically generate html, xml and other kind of documents. It is also a platform independent technology.

3. PERL with CGI Scripts - Perl is a high level scripting language which borrows its features from C, shell scripting etc. It can be used to do CGI (Common Gateway Interface) programming on a web server. It defines a way to pass the request and arguments to the command line and to return the results.

4. ASP.net - It is a web application framework that can be used to build dynamic web applications. It is not widely used as its functionality depends on the platform being used.

**Database management System**

1. MYSQL (which we used) - It is a relational database management system which is popular for web applications and is closely attached to the popularity of PHP.

2. MSSQL - It is also a database management system developed by Microsoft. It also has issues with platform independency.

### 3.3 Choice made

1. PHP as the server side scripting language with apache 2.2 as the server facilitating the processing of PHP code.

2. MYSQL as the relational database management system and sql as our query language.

### 3.4 Arguments leading to choice made

1. PHP became the first choice because of its platform independency and it’s widespread use as a web development scripting language giving it an edge over other alternates. Also it is a open source software and has many built in functions to facilitate common practical problems.

2. MYSQL became a choice as it is too a platform independent software and works very well with php.

3. PHP facilitates very good communication with the MYSQL database.
Now the server-Apache was taken as it is a open source project and can be found easily on the internet.
Chapter 4

Development Process

The following is the process through which we planned our development.

1. Planning and assignment of reading work to individuals
2. Reading up material for new technologies to be used
3. Deciding what technologies to use and distribution of work among group members
4. Individual work on independent components
5. Integration of the core services offered.
6. Embedding of core code into a standard html template, create links among all of all static and dynamic pages.
7. Putting it all together in the form of a software package.
Chapter 5

File Structure and implementation

5.1 PHP code Structure

The table below lists the various php files and what they exactly do. The following flow diagrams show how they are linked and how information is passed from one page to another.
<table>
<thead>
<tr>
<th><strong>File Name</strong></th>
<th><strong>Function</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>hot_dest.php</td>
<td>Generates Google map using XML generated by hotdestination.php, Lists top max_city cities using rate_overall through a SQL query</td>
</tr>
<tr>
<td>hotdestination.php</td>
<td>Generates the xml for the hot_dest.php using SQL query</td>
</tr>
<tr>
<td>input_virtualtour</td>
<td>Generates the xml file for input_r and input_v to display the top max_city cities on Google map</td>
</tr>
<tr>
<td>input_r.php</td>
<td>Displays Google map and allows input for information required for planning a trip</td>
</tr>
<tr>
<td>planmytrip.php</td>
<td>Displays the Google map with the Travel Plan onto it. Also displays the itinerary for travel.</td>
</tr>
<tr>
<td>realtour.php</td>
<td>Implements the algorithm for planning the trip given the initial city, number of days and type of travel and generates the xml for the Google map on planmytrip.php</td>
</tr>
<tr>
<td>input_v.php</td>
<td>Generates the map and the forms for input regarding showing of nearby cities</td>
</tr>
<tr>
<td>virtualtour_final.php</td>
<td>Processes the query to show nearby cities given travel_type, city_name and range</td>
</tr>
<tr>
<td>virtual_trip.php</td>
<td>Displays the cities on Google map near the city_name within a distance range from the init_city based on the travel_type</td>
</tr>
<tr>
<td>city.php</td>
<td>Displays the information of the city city_name by making appropriate queries Also retrieves xml file containing photos from flickr based on the flicker_keywords in the database. Sets up the session variables (containing image URL’s etc) for the file embed_photo.php</td>
</tr>
<tr>
<td>embed_photo.php</td>
<td>Shows the photos (URL’s received as session variables) as a slide show with appropriate timing</td>
</tr>
<tr>
<td>forum.php</td>
<td>Displays the titles of all the threads in the database</td>
</tr>
<tr>
<td>thread.php</td>
<td>Displays all posts in the thread with a given id</td>
</tr>
<tr>
<td>form_1.html</td>
<td>Input form for adding a new thread</td>
</tr>
<tr>
<td>form_2.html</td>
<td>Input form for adding a new post in a given thread</td>
</tr>
<tr>
<td>add_post.php</td>
<td>Adds a new post (received from form_2.html) into the given thread and updates the database</td>
</tr>
<tr>
<td>add_thread.php</td>
<td>Adds a new thread in the database</td>
</tr>
</tbody>
</table>
virtual_trip.php

planmytrip.php

hot_dest.php

POST city_name
SESSION vi_type, v_type

city.php

Add review

Session Variable containing image links
total_count, photo_small, photo_large

embed_photo.php

Automatic Self Refreshal to show new photos
5.2 Database Structuring

6 data tables have been used to manage the data we store. A brief description of the same is as follows.

1. city_data This tables store all factual information about the city. This include name, state, region, latitude, longitude and others. It also stores the flickr keywords that help return relevant photographs when passed to flickr search.

2. open_net This table stores all the posts posted on the web site. The title of new threads are stored with a special tag and all posts in a given thread are given the same id.

3. Feedback

4. city_review This table stores the reviews of the cities as posted by the users.

5. events

6. tour_packages It stores some standard tour packages with day wise detail.
5.3 Handling Google and Flickr

5.3.1 Google API

We use Google Maps API to embed Google Maps in our web pages and to provide a number of utilities like marking the desired cities and showing path of a trip. By using XML file as an intermediary between our database and Google Map, we make sure for a faster initial page load and a more flexible map application. For any feature like plan my trip, hot destinations and virtual tour we generate the required XML file and parse it in JavaScript to show the desired Map.

5.3.2 Flickr API

Flickr API is used in our project to present photos of any city. To perform an action, a request is sent to its endpoint specifying Flickr key, method name and some arguments. The response format, which is in XML, is parsed using PHP function and URLs of photos are generated. Then the photos can be presented in the form of a slide-show.
Chapter 6

Problems faced

6.1 Flickr API

The main problem was how to send request to Flickr and parse its XML to generate URLs and what to use either JavaScript or PHP. Then on searching on google we finally concluded to use PHP to implement Flickr API.

6.2 Google

We had two options either to use PHP and JavaScript directly or use XML as intermediary between them. On reading tutorials provided by Google API documentation, we followed their suggestion to use the latter for a lesser load time and a greater flexibility to use Maps application.
Chapter 7

Further Work

The software package allows for a platform to implement the following new things

1. Improvement of Algorithm for planning of trip
2. User feedback based evolution of data base
3. News updates and flashes about the city through appropriate information source
Chapter 8

How To Use?

The website has been made keeping in mind the fact that it should be as user friendly as possible. It has been made in such a manner that the user has no problem at all while using the site. The website is a collection of some easy to use features. The homepage provides links to all the main pages of the website.

The HOT DESTINATIONS page takes you to a page that shows the user the places that are very popular among the visitors to INDIA on a map. You may obtain further information about any city by clicking on it. Also the user can follow a link to FLICKR to see further images of the city.

The VIRTUAL TOUR feature is a way by which a user can take a tour of any city in INDIA. The user provides some information about the starting city and then all cities near him are highlighted on a map according to his preference of tourist places. The PLAN MY TRAVEL feature allows the user to plan his travel. The IMAGE GALLERY feature presents a small glimpse of the wondrous variation present in INDIA.

The creators have provided the feature of forum. Just by clicking on the forum link the user becomes a part of a social network. The FORUM provides a place where the user can read others thoughts and present his own. By clicking on a button the user has the option of making his feelings known to the world.

The USEFUL LINKS takes the user to a page where some links to popular sites have been provided.

The help desk provides the user with the ability to interact with the CREATORS through E-mail. A small part of information about the site creators is available on the THE CREATORS page along with the creators e-mail ids.

INFORMATION ABOUT INDIA tries to present a small amount of information about the great nation INDIA.
Links have been provided to the official site, GOOGLE and FLICKR to ensure that the user has no problem.

HOWEVER conceding the fact that the scope for improvement exists SUGGESTIONS FOR IMPROVEMENT have been asked by the creators.
Chapter 9

References

1. Google API tutorial
2. Flickr API tutorial
3. Dreamweaver tutorial
4. w3 schools php and javascript tutorials