

Group Project

Final Report – Group 19



Xi Leer (u3169006), Guangwei Luan(u3105172), Tenzin Dendup (u3149399), Dongge Wang (u3183663)

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# Executive Summary

As our group project, we decided to design, build and deploy a website on five tourist attraction areas in Canberra. We have used ASP.NET core framework to build the website and deployed it on a server on Amazon Web Services.

The group project underwent some changes during the initial weeks mainly due to academic conflict of group members undertaking similar work in another unit. Once these changes are sorted out, the group started building the project. An additional scope items were included along the way. At the end of the project, we are able to implement six scope items out of a total of seven. Lack of database programming skill contributed to us not being able to implement a very important feature of the website, which is the feature for users to post and view comments.

The source code and documentation produced during the course of the project is uploaded along with this report. Anyone wishing to run the website on their personal computers can do so once they install ASP.NET core frame work 2 and Visual Studio 2015 or 2017. For those wishing to deploy the website on a server, the group has created a deployment manual. As part of our project scope, we deployed our website on a server which is accessible using a public IP address, the details of which are given in the Technical Details section below.

Because the project did not have complicated scope, it also did not have lots of tests to be carried out. The group tested for proper functioning of URL links and the google map feature.

There are things that went well as well as things that did not go well during the project implementation. Things that went well include the communication channels used, project development and building tools used, final deployment and documentation. Things that did not go well include the initial plan, initial skill assessment of the group members, decision to not use version control and lack of group cohesiveness during the initial part of the project (which can be related back to not having a good initial plan).

By undertaking this project, the group learned the importance of group work, group cohesiveness and communications in a group. We also realized the importance of having a clear and succinct initial plan, a clear understanding of group’s technical skill set and importance of change management and configuration management tools.

# Project Success Report

In the initial project plan, the group decided to build a website on restaurants in Canberra which will provide a description, location map, menu and price information of each restaurant.

In week 5, after the submission of initial plan, we found out that some of the group members are taking a unit on Web Design, where the assessment item included building a similar website on restaurants. In order to avoid academic conflicts between units, we had to change our project scope.

After consultation with the the tutor in week 5 tutorial (7 September, 2017), we decided to build a website on five places of tourist attraction in Canberra. In week 6, we added another scope item (feature to post and read comments) to the project to increase functionality of the website. To keep track of and document these changes, the group members used a Word file shared through the university’s email account on Office 365 as our changelog.

Once the project topic was finalized, we had the following scope for the project:

1. A brief description of each of the five tourist places in Canberra
2. Location map of each place using google maps
3. Links to their websites
4. Picture gallery
5. Website to be hosted or deployed on a public server
6. Deployment documentation or manual
7. Ability for site visitors to post and view comments

Out of these seven scope items, we have successfully implemented six of them. While we did implement a rudimentary picture gallery, we were not able to implement it as per the design. As for the commenting feature, since it involved interacting with a database backend, we were not able to implement it. This is mainly due to lack of database programming skill in the team. While we had team members undertaking web programming courses, it was not feasible to implement it while at the same time learning about it in another unit. Hence, while the website shows the commenting user interface (Text box and comment button), the actual functionality has not been implemented. If a user enters some text and clicks on the button, it doesn’t do anything.

The overall website look-and-feel has also changes slightly from the initial design since we were not able to implement advanced CSS and JavaScript.

Looking at the programming skills that the team possessed and the amount of time the team members were able to dedicate to the project, we feel that our choice of project and its scope has been realistic. Including too much features into the website would have certainly resulted in them being unimplemented.

# Project Delivery Report

## Technical Details

The group project for Group 19 is building a website showcasing places of interest to tourists in Canberra. The website was built on ASP.NET Core framework using Microsoft’s Visual Studio as Integrated development environment.

To configure and run our website on a personal laptop for development purpose, the laptop should have the following configuration and softwares installed:

1. Operating system – Windows 7 or higher OR Mac OS
2. 2 GB or more RAM
3. ASP.NET Core Framework 2.0 or greater
4. Microsoft Visual Studio 2015 or 2017

The source code for the website is uploaded along with this report in a zip file.

For production deployment on a public server, the group has deployed and tested the website on an Amazon Elastic Cloud Compute (EC2) instance running Debian 9 (Stretch). ASP.NET Core is a cross platform, open source framework which can be installed on many operating systems. To deploy the website, the following configurations and software installations are required on the server:

1. Amazon EC2 instance or any other server running Debian 9
2. Apache webserver
3. ASP.NET core framework 2.0 or greater

For detailed instruction on deployment, we have created a deployment manual which is submitted along with this report.

While the website can be deployed on other servers running different operating systems (for example, Windows server running IIS web server), the group decided to use Amazon Web Services (AWS) because we are able to use the services for free through the Amazon Educate program, using our university credentials. Also, some group members are familiar with Debian and AWS, which enabled us to deploy the website quickly.

The website deployed on AWS and the deployment manual can be accessed at the following URLs:

* Website: <http://54.70.241.11/>
* Deployment Manual: <http://54.70.241.11/deployment_documentation.pdf>

## Test Report

Due to the nature of the project, we did not have substantial testing plans. The initial project plan listed testing the links on the website to ensure they are working properly, and testing to ensure that google maps used on the website work correctly. These tests are carried out while the website is being coded and also once the website is deployed on the server.

# Lessons Learnt

During the course of the group project, we became aware of the importance of group cohesiveness, having a right mix of personalities and having a good communication channel. The group used easy online communication channels that all the members are familiar with which made communication easy. As the project progressed, the group became more cohesive compared to the early weeks when communication and interaction was not very comfortable. We also made a good choice to use ASP.NET and visual studio as our development framework and platform since this eased development effort by not having to install and configure separate compilers, frameworks and integrated development environments. The group also did well in deployment and writing deployment manual. This highlighted the importance of past experience and skill which can be used to implement projects.

The group learnt the importance of planning phase of a project. As a group, we did not do very well in creating our initial plan which resulted in the members not having a clear idea of what the project will require, in terms of effort and skill. Together with the initial plan, the group also did not have a clear understanding of skills possessed by each member. These conditions during the early phase resulted in a project schedule that was not based on any formal estimation method. The team was not clear on what skills will be required to implement the scope of the project. In future projects, we would put in extra effort to build a cohesive team, get to know the skill set of the team extensively, learn estimation techniques and come up with a proper project plan. We would also factor in time to learn any new skill required for the project in the project schedule timeline.

The group members decided not to use any version control software to manage co-development and version management. This was mainly due to lack of experience in using version control technologies. We did not want to spend time learning version control because we thought it would take time and also because we did not factor in time to learn version control in our project schedule. In its place, we decided to use a shared folder on Office 365 to upload our code and keep backups. However, the importance of version control became apparent when we could not keep track of uploaded files. We were not able to integrated each other’s work. This resulted in us having to meet and manually sort out the source code files.

In summary, we can list the lessons learnt as:

* Importance of planning phase
* Having clear idea of groups skill set
* Importance of version control in group projects
* Importance of acquiring required skills and factoring in the time required to acquire the skill in the project schedule
* Importance of team cohesiveness
* Importance of easily accessible and usable communication channel