

Project Description

Overview

In this course, you will be working in groups of **3 or 4** on a final project that runs on the **Cloud**. Your project should be a web service following RESTful architecture style that runs on a Cloud platform and meets the requirements below. Throughout the semester, you will work on your project and to present and discuss it with the class. During the final week of the semester you will present and demonstrate your project to the class and possibly some outside evaluators.

Requirements

Mandatory

Your project must include the following:

1. Utilize a Cloud platform such as [Amazon EC2](#), [Google App Engine](#), [Windows Azure](#), [Joyent](#), [Linode](#), [Heroku](#), [Rackspace](#), [Eucalyptus](#) etc or **setup a private cloud by yourself on your own computers**.
2. Use a non-traditional data store for some aspect of your web application.

PLEASE BE CAREFUL, if you decide to use a public repository to host your source code, please DO NOT save your public cloud account keys to the repository, nor to put the plain text of your account keys and tokens into the source code. The leaking of your account information is the same as leaking your credit card information publicly. A possible fraud can incur with unexpected high cost in your billing of using the public cloud.

When you use a public cloud, you should be aware of the possible cost and you are responsible for the cost incurred by yourself.

Extra Feature

Your project must select one of the following features to implement:

1. Utilize or mash up external web services as part of your application.
2. Create a mobile application that takes advantage of your web service.
3. Take advantage of a platform-specific feature. For instance, if you use [Amazon EC2](#), you can take advantage of [S3](#) or [DynamoDB](#).

4. Provide a language binding for your web service.
5. Expose REST APIs for your web service.

Schedule

This project includes the following deliverables and time schedule.

D1 Friday, Jan 16 23:55 : Group information submitted

Find project partners and discuss your possible project ideas and what sort of platform you wish to use. The size of a group is 3 or 4. Please select your group leader.

The group leader should submit to Moodle site a single pdf or txt file with the file name

D1-[SID of Member]- [SID of Member]- [SID of Member].pdf or

D1-[SID of Member]- [SID of Member]- [SID of Member].txt

containing the following information

- For each group please indicate the following information of each member
[SID] [First and Last Name] [Undergraduate or Graduate] [Project Leader Yes/No]

D2 Friday, Feb 06: Group Presentation [5 points]

D2.1 At the class time, each group will give a 5-minute presentation on their project. Be sure to address the following questions:

1. Title of your project
2. What is the problem your project is trying to solve?
3. Who would be the end users of your web service?
4. How would you meet the project requirements?
5. What would you want to do and what will you actually accomplish?

This group presentation is compulsory. Without the presentation, the project scope will not be approved by the lecturer. As a result, this may lead to a complete failure of the whole project.

One representative member of each group gives the talk. Others may be asked to answer questions.

D2.2 By Friday Feb 06 23:55, the presentation slides from each group should be uploaded to Moodle site, given the file name as

D2-[GroupID].pdf or D2-[GroupID].ppt

D3 Friday Mar 06: Progress Report [5 points]

D3.1 At the class time, each group should give a 5-minute presentation to cover the following

- Title of your project
- Main function of your web service (or application)
- Architecture design (e.g. UML diagrams to represent the structure of the design, interaction and deployment)
- Technologies used and what have you accomplished so far?
- What issues have you faced and how have you overcome them?
- What do you have left to do?
- Are your goals still the same?

D3.2 By Friday Mar 06 23:55, the presentation slides from each group should be uploaded to Moodle site. The presentation slide should be submitted the following name convention

D3-[GroupID].pdf or D3-[GroupID].ppt

D4 Friday Apr 10 : Final Presentation, Demo and Report (15 points)

D4.1 At the class time, each group will give a 15-minute presentation and demonstration of their project. Be sure to address the following questions:

1. What is your web service?
2. Your architecture design and use of cloud technologies (be sure to address the project's mandatory requirement)
 - Does your architecture follow the REST architecture style?
 - Please present our data model, storage and access to data.
 - Be sure to describe the architecture of your application and the various components.
3. What extra feature(s) have you achieved?
4. Techniques you applied for implementation
5. What works and what doesn't work?
6. Discussion on how your architecture can address one or more quality attributes of performance, scalability, availability, and security
7. Discussion on the strengths of the cloud technologies you applied and what limitation you have experienced so far.
8. Live demo (in case of failure, prepare a backup video demo)

Each member should perform one of the activities of presentation talk, live demo and Q&A.

D4.2 Friday Apr 10 23:55, each group will submit

a) A single **report file** to contain the following

- Title of the project
- Abstract and Summary
- Context and Problem Statement

- Function of the web service
- The architecture design
- The technical implementation
- Discussion on the quality attribute that this project addressed by using cloud technologies
- Discussion on the experience and lessons learnt
- The role and technique contribution of each member (please be noted a person who only performs document writings will be considered as no technical contribution)
- The URL to access your project source code
- The URL to access your web service
- Reference to technical and academic articles

The report should be within 4 pages including all the figures and references, following the format of

http://www.ieee.org/conferences_events/conferences/publishing/templates.html

The file name should follow the following naming convention

D4-report-[GroupID].pdf

b) The presentation slides in ppt or pdf with the following naming convention
D4-presentation-[GroupID].pdf or D4-presentation-[GroupID].ppt

c) all the source code of your project in a single package.

D4-project-[GroupID].tar or D4-project-[GroupID].zip