

University of Washington Bothell

CSS 490: Cloud Computing

Program 4: Website + Storage

Purpose

This programming assignment will introduce the student to using multiple services in the cloud working together. In particular the student will use S3 or Blob, DynamoDB or Azure Tables, and website technology which allows server side code (ASP.Net, MVC, etc...).

Problem Statement / Overview

Create a Website which has three sections:

- 1) A button call **Load Data**
- 2) Two input text boxes labeled **First Name** and **Last Name**
- 3) A button called **Query**

When the "Load Data" button is hit the website will load data from an object stored at a given URL (I will have the data both in Azure as well as Amazon S3). The object should be first loaded to a local object store (S3 or Azure Blobs) in the students cloud. The data should then be shredded and loaded into a <Key, Value> NoSQL store (Dynamo DB or Azure Tables). Once the data has been loaded in the NoSQL store the Website user can type in either one or both a First and Last name. When the Query button is hit results are shown on the Website.

This lab will require both the working Website as well as a design document and report.

The lecture slides from class give students links to ASP.Net website tutorials if they need them to get started. That said, ASP.Net is not required and the student can use any web site infrastructure that they would like. The website should be hosted in either Amazon or Azure.

Problem Statement Details

Data Format

The blob/object can be found at the URLs noted below. The format will be a text file with one line per item. Each line will have a last name, a first name and then a variable number of attributes:

lastName firstName [attribute1=value1 attribute2=value2 attribute3=value3 ...]

Example Data:

Dimpsey Robert id=65764 phone=4528769876 office=trulyhouse
Vollmann William id=87643 phone=8769870987 age=57
Trevor Billy id=7638 age=81 gender=M
Munro Alice id=9876 age=65 gender=F
Dimpsey Pearl id=98776 phone=4528769876 office=none

Query

The last name / first name combination are guaranteed to be unique. A query of "Vollmann" and "William" should return the attributes: id=87643 phone=8769870987 age=57.

A query of "Dimpsey" "" should return both:

Dimpsey Robert id=65764 phone=4528769876 office=trulyhouse
Dimpsey Pearl id=98776 phone=4528769876 office=none

Location

The website should expect to find the data at these two locations. You will only have to read from one location.

<https://s3-us-west-2.amazonaws.com/css490/input.txt>

<https://css490.blob.core.windows.net/lab4/input.txt>

Report

You will turn in a report which will be part of the grade. The report must include the following:

- Location of the URL of the site
- Clear design diagrams of final project
- Discussion of how the site will scale with load
- Discussion on how monitoring is done on the site
- Estimate of your SLA

Keep in mind

- Each item will have a first name and a last name
- An item may have 0 or more attributes
- Make sure the WebSite provides good feedback to the user. For instance, make sure useful messages are shown when the load is complete.
- The load button can be hit multiple times
- If only one of the first name or last name is given then all matches should be shown

Turn In

- Zip file containing
 - All code written
 - Report as described above
- Make sure your website is running