Curriculum Web Service

(Code name: Omar)

Overview:

As part of the strategic direction for the Pioneering Technology Group (PTG), we are developing a series of applications based upon web-services. The first of these services has been dubbed Omar. Omar is envisioned to provide core information about the curriculum, specifically courses and classes. Some of data that is provided via the Omar web service is pulled from SOLAR, whereas other information is pulled from the CSUN catalog. Regardless of the source of the information, the "curriculum web service" provides a uniform way to request information related to courses and classes offered at CSUN from a single source. Moreover, this web service allows other web sites to consume the information and present the information in different ways to address the needs of the site's users.

Scope:

The initial implementation of curriculum web services is designed around the delivery of public-viewable information. This information will be used predominantly, in its initial deployment by a number of CSUN-sponsored websites. For example, the CSUN Catalog and the Faculty Registry will consume information about courses catalog information and faculty assigned classes, respectively. Other web services are other web services have been envisioned including: FRESCO and MOSAIC.

- FRESCO: Faculty Roles, Expertise, Syllabi, Classes, and Office hours
- MOSAIC: Mapping of Outreach, Service and other Activities Involving the Community

Public-viewable Information and Data Elements:

The curriculum web service (V1.0) provides information about courses and classes. This information is derived from the CSUN catalog and SOLAR, respectively. The web service, itself, does not manage any of the information -- it simply provides a gateway to access the information via a REST-ful API.

Example Course information:

UNIV 100. Freshman Seminar (3)

This course introduces first-time freshmen to … The course includes weekly writing assignments, frequent in-class exercises and some on-campus field trips. (Available for General Education, Lifelong Learning.)

Program Name (UNIV), Course Number (100), Title (Freshman Seminar), Description, and Units (3)

Example Class Information:

Class Name	Class Number	Meeting Days	Start Time	End Time	Location	Instructor
UNIV100	18220	MW	8:00am	9:15am	OV001	Staff
UNIV100	18231	TR	9:30am	10:45am	OV001	Staff

REST-ful API (URIs)

The REST-ful API for the curriculum web service is comprised of two collections (courses and classes) with three general types of URI:

1. Subcollection, e.g., curriculum.ptg.csun.edu/courses/cit
2. Instance,   e.g., curriculum.ptg.csun.edu/classes/15223
3. Query,   e.g., curriculum.ptg.csun.edu/classes?instructor=staff

The subcollection URI allows the consumer to obtain a list of courses or classes that are either part of a single program (e.g., CIT: Computer Information Technology) or Class Name (e.g., UNIV 100). The instance URI allows the consumer to obtain information about a single course (e.g., UNIV 100) or a single class[1] (e.g., ticket number: 18220). The query URI allows a consumer to obtain a list of courses or classes that meet a particular criteria. For version 1.0 of the curriculum web service, the search criteria is limited to accommodate specific requests.

COURSES:

The first collection is the courses collection. This collection enumerates all the active courses that may be offered as a class at CSUN. Information associated with expired, dormant, or pending courses is not provided. The subcollection URI form allows the consumer to get information related to an academic subject. For example, you can obtain all courses associated with the Computer Science program via the catalog subject key: COMP.

> http://curriculum.ptg.csun.edu/courses/comp   (Subcollection)

The information that is returned is a JSON object that contains a set of courses, with each element of the set providing the public-viewable information associated with a single course. The format of the JSON object is as follows:

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[1] A class is identified by a per-term, unique number, and this number also has been referred to as the ticket number.

```json
{
     "status":  200,
     "success": true,
     "version": "omar-1.0",
     "type":    "courses",

     "courses": [
          {
               "subject": "COMP",
               "catalog_number": "100",
               "title": "Computers: Their Impact and Use",
               "course_id": "19187",
               "description": "Not open to ...",
               "units" : "3",
               "term": "Fall-2014"
          },
          {
               "subject": "COMP",
               "catalog_number": "101",
               "title": "Introduction to Algorithms",
               "course_id": "19185",
               "description": "Not open to ...",
               "units": "2",
               "term": "Fall-2014"
          },
          ...
     ]
}
```

The instance URI allows the consumer to obtain information about a single course. The JSON object that is returned is of the same form, but the "courses" array will have a single element. The specific course is identified by the concatenation of the subject and catalog_number, e.g., comp-100.[2]

The query URI is not implemented at this time.

CLASSES:

The second collection is the classes collection. This collection enumerates all the active classes that are being offered during the current term at CSUN. By augmenting the URI, a consumer can obtain information related to both future and past terms. The subcollection URI form allows the consumer to get information related to all classes of a given subject or a given course. The following two URIs illustrate how the consumer requests information about all

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[2] The key is presented in lower-case form, and is hyphenated to conform to rest-ful API standards and readability.

currently offered classes by subject (e.g., COMP) and all currently offered classes by subject-number (e.g., COMP 110)

http://curriculum.ptg.csun.edu/classes/comp   (Subcollection)
http://curriculum.ptg.csun.edu/classes/comp-110   (Subcollection)

The information that is returned is a JSON object that contains an array of classes, with each element of the array providing the public-viewable information associated with a single class. The format of the JSON object is as follows:

```
{
      "status":  200,
      "success": true,
      "version": "omar-1.0",
      "type":    "classes",
      "classes": [
            {
                "class_number": "15223",
                "subject": "CIT",
                "catalog_number": "160",
                "section_number": "2",
                "title": "Internet Technologies",
                "course_id": "19187",
                "description": "Not open to ...",
                "units": "3",
                "term": "Fall-2014",
                "class_meetings": [
                      {
                            "meeting_number": "1",
                            "location": "JD1600",
                            "start_time": "0915h",
                            "end_time":  "1045h",
                            "days": "MW"
                      }
                      ...
                ]

                "class_instructors": [
                      {
                            "instructor": "email@csun.edu"
                      },
                      ...
                ]
            },
            ...
```

```
            ]
    }
```

The instance URI allows the consumer to obtain information about a single course. The JSON object that is returned is of the same form, but the "classes" array will have a single element. The specific course is identified by the class number, which has historically been referred to as the ticket number.   For example, the following URI retrieves information about a single class.

> http://curriculum.ptg.csun.edu/classes/15223

For the class collection, the query URI supports only a single search pattern. This pattern allows the consumer to request all courses of a given instructor. For example, to find all the classes taught by the Harry Hellenbrand, the URI would be:

> http://curriculum.ptg.csun.edu/classes?instructor=harry.hellenbrand@csun.edu

Non-Current Term Classes

While it is envisioned that the curriculum web service will be used to predominantly obtain information about the current term, there will be cases where either past or future class information is desired.   To address this need, the classes URI can be augmented with a term collection. Without the term collection provided, the term defaults to the current term. Presuming the current term is the Spring-2014, the following three URIs can be used to retrieve the past semester, the current semester and the next semester class information.

> http://curriculum.ptg.csun.edu/terms/Fall-2013/classes/
> http://curriculum.ptg.csun.edu/terms/Spring-2013/classes/
> http://curriculum.ptg.csun.edu/terms/Fall-2014/classes/