This project will deliver a Web-based solution for accessing environmental data in support of high school and middle school science classes. The data will include aerial and satellite imagery of the San Francisco Bay Wetlands, as well as other, related data, and for displaying observations captured by the students. The site will also provide support for specific lessons on ecology.

The project will be divided into several subprojects: user interface, database, ArcIMS system, and documentation. You will be assigned to at least one of these areas, and some of you may be assigned to both a technical area (e.g., user interface and to documentation). All of you are expected to contribute to the final documentation.


**User and System requirements**

1. The target Web environment will be Google Maps and Google Earth.
2. The web site must provide access for the target user, a high school science student engaged in a study of the Bay wetlands.
3. The environmental data will be hosted on a server at San Jose State University.
4. The site’s user interface should enable the user to easily access images and other related geographic data.
5. The site’s user interface should enable the user to examine the available data, and to perform activities as outlined in specific lesson plans.
6. The user must be able to create geographic layers based on field observations and to be able to integrate local layers with those on the ArcIMS server.
7. The ArcIMS site should provide good response to user requests, allowing for demands on network resources and for variation in client hardware.
   a. The display should refresh in a reasonable amount of time.
   b. Results from “identify” and query operations should return in a reasonable amount of time.

**Project tasks**

Define detailed project requirements

1. Work with master teachers to develop activities to support the targeted lesson plans.
2. Identify user interface and data needs.
3. Determine appropriate Web environment for the activities (Google Earth vs. Google Maps).

User interface

1. Develop user scenarios
2. Prototype user interface
3. Test prototypes and select design
4. Construct website user interface
5. Test user interface

References:


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Data
1. Identify available data.
2. Specify data needed for specific activities.
3. Organize and format data to support the activities in the target web environment.

Database Testing
1. Design performance evaluation
2. Test and evaluate performance
3. Design production database
4. Construct database schema
5. Load database
6. Test database retrieval
7. Test database performance

References:

Documentation
1. Design documentation organization
2. User interface documentation
3. User tutorial
4. Image database documentation
5. System documentation

Reference: