Collegiate Times Grades

James O’Hara
Hang Lin
Client: Alex Koma, managing editor, Collegiate Times
Blacksburg
May 1, 2014
Virginia Tech
CS 4624
Outline

- Overview of project
- Design, development, evaluation process
- Problems encountered
- Lessons learned
Project overview

- The Collegiate Times collects Virginia Tech course grades
- Collated into a publicly available database
- The CT recently changed web hosts and has not migrated the database
- The project will create a new public home for this data
Design guidelines

1. Prominently display data
2. Must be easy to understand
3. Data must be sortable
4. Data must be paginated
5. Queries must be easy and productive
6. Must be identifiable with Collegiate Times brand
# Design

<table>
<thead>
<tr>
<th>#</th>
<th>Subject</th>
<th>Year</th>
<th>Semester</th>
<th>Hour</th>
<th>GPA</th>
<th>%A</th>
<th>%B</th>
<th>%C</th>
<th>%D</th>
<th>%F</th>
</tr>
</thead>
<tbody>
<tr>
<td>3214</td>
<td>CS</td>
<td>2013</td>
<td>FALL</td>
<td>3</td>
<td>2.75</td>
<td>22</td>
<td>31</td>
<td>32</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>3214</td>
<td>CS</td>
<td>2012</td>
<td>FALL</td>
<td>3</td>
<td>2.72</td>
<td>21</td>
<td>33</td>
<td>30</td>
<td>13</td>
<td>3</td>
</tr>
<tr>
<td>3214</td>
<td>CS</td>
<td>2011</td>
<td>FALL</td>
<td>3</td>
<td>2.77</td>
<td>24</td>
<td>30</td>
<td>36</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>3214</td>
<td>CS</td>
<td>2010</td>
<td>FALL</td>
<td>3</td>
<td>2.85</td>
<td>27</td>
<td>28</td>
<td>34</td>
<td>9</td>
<td>2</td>
</tr>
</tbody>
</table>
Prototype

1. HTML form process user request
2. Connects to database
3. Queries database with information provided by user
4. Outputs results into table with PHP
5. Formats table with JavaScript
Evaluation

- Usability inspection
- Collegiate Times experts:
  - Sorted dropdowns
  - Denote required criteria
  - Explain database
- Computer science experts:
  - Prevent SQL injection
  - Limit query size
  - Report back user’s query in English
Final product
Final product

* Indicates required field

Subject*: Select a subject.  
Course number*: Select course number.  
Year: Select a year  
Semester: Select a semester.  
Submit
Final product

<table>
<thead>
<tr>
<th>Subject</th>
<th>Course number</th>
<th>Year</th>
<th>Semester</th>
<th>GPA</th>
<th>%A</th>
<th>%B</th>
<th>%C</th>
<th>%D</th>
<th>%F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer Science</td>
<td>4624</td>
<td>2002</td>
<td>Spring</td>
<td>3.08</td>
<td>36.6</td>
<td>55.6</td>
<td>11.1</td>
<td>2.8</td>
<td>0</td>
</tr>
<tr>
<td>Computer Science</td>
<td>4624</td>
<td>2002</td>
<td>Spring</td>
<td>2.99</td>
<td>29.4</td>
<td>47.1</td>
<td>20.6</td>
<td>2.9</td>
<td>0</td>
</tr>
<tr>
<td>Computer Science</td>
<td>4624</td>
<td>2003</td>
<td>Spring</td>
<td>3.52</td>
<td>55.9</td>
<td>35.3</td>
<td>8.8</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Computer Science</td>
<td>4624</td>
<td>2003</td>
<td>Spring</td>
<td>3.51</td>
<td>70.6</td>
<td>14.7</td>
<td>14.7</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Computer Science</td>
<td>4624</td>
<td>2004</td>
<td>Spring</td>
<td>3.67</td>
<td>76.5</td>
<td>11.8</td>
<td>11.8</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Computer Science</td>
<td>4624</td>
<td>2004</td>
<td>Spring</td>
<td>3.81</td>
<td>64.7</td>
<td>29.4</td>
<td>5.9</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Computer Science</td>
<td>4624</td>
<td>2005</td>
<td>Spring</td>
<td>3.24</td>
<td>40</td>
<td>43.3</td>
<td>16.7</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Computer Science</td>
<td>4624</td>
<td>2005</td>
<td>Spring</td>
<td>3.64</td>
<td>70.4</td>
<td>29.6</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Computer Science</td>
<td>4624</td>
<td>2009</td>
<td>Spring</td>
<td>3.60</td>
<td>75.7</td>
<td>21.6</td>
<td>0</td>
<td>0</td>
<td>2.7</td>
</tr>
<tr>
<td>Computer Science</td>
<td>4624</td>
<td>2011</td>
<td>Spring</td>
<td>3.33</td>
<td>55.8</td>
<td>25.6</td>
<td>14</td>
<td>4.7</td>
<td>0</td>
</tr>
</tbody>
</table>
Problems

- Data hidden or missing
- Dynamic dropdowns not populating
- Querying correctly
- Tablesorter extension
Lessons Learned

- Working with a client
- How to use SQL
- Developing for the future
- Working around missing information
- The full development cycle