Geography 476 gis practicum

tamu GIS Day

outline

February 2014

Abstract

A huge struggle that is often reported in the Geospatial profession is when customers complain way more than they know how (or care) to fix. However, the gap between GIS Specialists and typical users of geographic data or services could potentially be lessened through mobile GIS solutions……

**TAMU** **GIS DAY Application**  
 SERVICES agreement   
& project outline

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# introduction

A huge struggle that is often reported in the Geospatial profession is when customers complain way more than they know how (or care) to fix. However, the gap between GIS Specialists and typical users of geographic data or services could potentially be lessened through mobile GIS solutions.

This project includes the creation and development of a website and native application for Android smart phone devices. In the fall semester before annual GIS Day events, these tools will be used to advertise the event schedule, event details, locations etc. They will also be used for communication between professors and students, as well as provide a map for potential attendees who are unfamiliar with campus. We will have a component for “participant check-ins” through the mobile phone application to compile lists of participants at the specific events. These will be sorted and filtered correctly, after events, to provide professors a list of students who checked in for each event listed as extra credit for their courses. The following sections will detail the project.

MOBILE-Event Advertising; MOBILE-Event Attendance; MOBILE- and WEB- Mapping;

With the main purpose being to use, possibly improve, current data collection methods via mobile device, this application will be less focused on technical GIS methods and more focused on the user friend-ability. The final applications and webpage will allow for student, guest and professor use. The entire application components will only be available to users who have set up a log-in and are currently logged in. For registered users, there will be a longer list of menu items to access more options on event registration, reminders, personal information and account settings. The final applications and webpage will allow for student, guest and professor participation. As administrators, we will have to manually change the account level for any professor that wants to add their courses for extra credit.

# lite review

Towards rich mobile phone datasets: Lausanne data collection campaign <http://www.idiap.ch/~gatica/publications/KiukkonenBlomDousseGaticaLaurila-icps10.pdf>

System and method for mobile data collection US 7313759 B2 <http://www.google.com/patents/US7313759>

**Data reconciliation between a computer and a mobile data collection terminal US 6694366 B1** <http://www.google.com/patents/US6694366>

Design and Implementation of a Mobile GIS for Field Data Collection <http://ieeexplore.ieee.org/xpls/abs_all.jsp?arnumber=5171169>

Developing GIS-supported location-based services <http://ieeexplore.ieee.org/xpls/abs_all.jsp?arnumber=996708&tag=1>

Integrated Mobile GIS and Wireless Internet Map Servers for Environmental Monitoring and Management <http://www.tandfonline.com/doi/abs/10.1559/1523040042246052#.UwbnXfldWPY>

Geo-data acquisition through mobile GIS and digital video: an urban disaster management perspective <http://www.sciencedirect.com/science/article/pii/S1364815203001051>

Field Data collection with Mobile GIS: Dependencies between semantics and Data quality <http://download.springer.com/static/pdf/537/art%253A10.1023%252FA%253A1020805511054.pdf?auth66=1393134329_b8b2195afc4965037ff56aef41f172dd&ext=.pdf>

# Data & Resources

The data used in this project will be user-, faculty- or staff-provided and will depend upon the upcoming GIS Day Events’ schedule. Professors and students will create log-in accounts and will be able to input their course information for that fall semester. Their course information will be stored in one of two ways; for professors, as they add a class they will be given the option to “assign” any of the events they want for that course. This will be viewable by others on the website and mobile phone as an available event that professor would give credit to his/her students for attending. Students can add their courses only thru the mobile phone application. It will give the available classes listed from professor added classes as choices, all other classes which are not automatically listed are assumed to be taught my professors who are not participating and would not give credit for their students attending. Event “check-ins” will take the user to a screen where they have the choice of entering the event code (given at the event) or scanning a picture of the event QR code. Both, either, of these “Check-in” methods will have the specific event tied to its identity. After all events, we will make lists of event participation for each teacher who added classes they wanted to give credit for.

Mobile Component // Package name: edu.geoservices.gisday

Desktop component // Website: gisday.tamu.edu

Data component // Database & Server: geodb08.tamu.edu/GISDay

Tables:

1\_ **Professors 2\_Participants** 3\_**Events** Professor\_GUID Participant\_GUID Event\_GUID

**1.A Classes (professor added) 2.A Participant\_RSVP 3A\_Checkins**

Class\_GUID Participant\_GUIDCheckin\_ID

Professor\_GUID Event\_GUID Participant\_GUID

EventGUID from

Event code or myQRcode.com

**1.B Courses\_Availablefor\_Credit 2.B Participant\_Courses**

**Class\_GUID** Participant\_GUID

Professor\_GUID Class\_one (~a selected class guid)

Credit\_GUID Class\_two (~a selected class guid)

IF a PARTICIPANT – checks in – for an EVENT (guid) which is listed as a course for extra credit AND one of their Classes (the one with the event listed…. \_one, \_two, \_three) == Class\_GUID for

Software: Android ADT Eclipse, SQL Server Management Studio, GitHub Repository, Microsoft Visual Studio,

Languages: Java, JavaScript, HTML, JSON (REST pages)

# methods & analysis

**Smart Phone Application**

**Menu Items:**

Login

Event Calendar ------ Event Details

Event Check-in

Map

Share

Settings

Log Out

**Application Components:**

GPS Location aware

Push notifications 30 minutes before an event

Event Reminders

Link to SHARE

**Webpage   
gisday.tamu.edu**

Website/Server

/Rest

/Checkin

/events

/map

/share

# Results & Discussion

# Conclusion

|  |
| --- |
| **Professors** |
| **ProfessorGUID** |
| **Name** |
| **Email** |
| **Department** |

|  |
| --- |
| **Events** |
| 1. **Event\_ID** |
| 1. **Event\_GUID** |
| 1. Title |
| 1. Subject |
| 1. Brief details |
| 1. Date |
| 1. Time |
| 1. Location |
| 1. Duration |
| 1. Key-note speaker |
| 1. **QR\_code** |
| 1. Social media share |

|  |
| --- |
| **Classes** |
| Class\_ID |
| **Class\_GUID** |
| **Professor\_GUID** |
| Class Title |
| **Class code** |

|  |
| --- |
| **Checkins** |
| **Checkin\_ID** |
| **Participant\_GUID** |
| **Event\_Code** |
| Event\_QR |

|  |
| --- |
| **Course\_Credits** |
| Credit\_ID |
| **Class\_GUID** |
| **Professor\_GUID** |
| Class Title **or code** |
| **EventGUID1**….. |
| **EventGUID**(n) |

|  |
| --- |
| **Participants** |
| **Particpant\_ID** |
| Participant\_GUID |
| Name |
| Email |
| UIN |

|  |
| --- |
| **Partipants\_Courses** |
| **StudentCourse\_ID** |
| **StudentCourse\_GUID** |
| **Participant\_GUID** |

|  |
| --- |
| **Participant\_RSVP** |
| **StudentRSVP\_ID** |
| **StudentRSVP\_GUID** |
| **RSVP\_yesno** |