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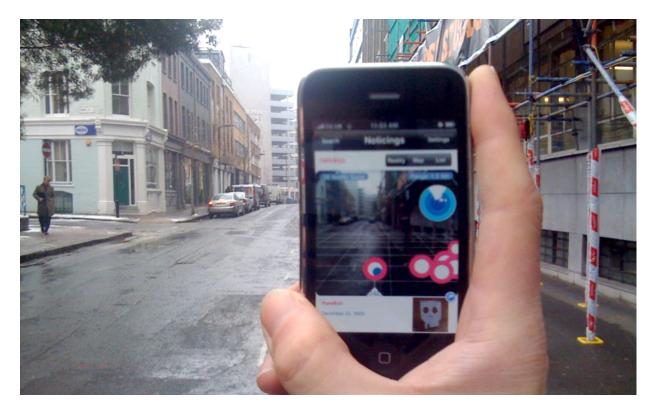**CROWD SOURCED CITY: SOCIAL MEDIA, TECHNOLOGY AND PLANNING PROCESSES**
INSTRUCTOR: SARAH WILLIAMS (sew@mit.edu)
CLASS TIME: TUESDAYS 9:00 – 12:00
OFFICE HOURS : THURSDAY 9:00 – 12:00
LOCATION: 10-485
CREDIT: 3-0-9 H

DESCRIPTION:

Social media networks, crowd sourcing, cell phone applications all allow us to see and understand cities and our role within them using a new lens. This workshop class will investigate the use of social media and digital technologies for planning and advocacy by working with actual planning and advocacy organizations to develop, implement, and evaluate prototype digital tools. Students will use the development of their digital tools as a way to investigate how new media technologies can be used for planning.

Student groups are paired with non-profit clients to develop a strategy for using social media and mobile technologies. Students are required to implement part of their strategy before the end of the class. They are also required to develop a method for how their "client" might incorporate these strategies into their own work processes. Students work with non-profits and learn how these two groups approach problems differently. The implementation phase teaches the students what works and what does not. This allows them to analyze how well their goals aligned with their strategies. Students learn the most from implementing their strategies as they discover how their theories apply to real world situations. The course will allow students to develop their own strategies for CROWD SOURCING THE CITY.

OBJECTIVE:

The main objectives of the course will be to: 1) gain a solid background in how social media and crowd sourcing are currently being used in urban planning. 2) gain hands on experience with civic organizations that might be able to use social media and mobile technologies for their planning purposes. 3) help planning

organizations use the information they collect to advocate for their needs. 4) prototype and implement actual mobile media strategies and critic results.

TOOLS /TECHNOLOGY REQUIREMENTS:
1) Students will all acquire their own webhosting site and URL for the development of their work. Students will purchase themselves – in order to be able to install scripts and develop other web-based technology.
2) Learn the basics of creating website using Bootstrap templates, Drupal, and Word Press.
3) Students will develop a web-mapping site that allows users to add data by text, social media data online interaction using the web-mapping program Ushahidi and Shareabout.
4) Students will learn how to develop interactive text messaging systems, which allow for media blasts.
5) Learn to develop basic android phone application using App Inventor which is a visual programming language.
6) Develop basic data collection tools using phones as device.
7) Learn to work with API's for sites like Instagram and Tumblr that allow you to port social media data onto website.

WORKSHOPS:
Technology workshops will teach the basic tools used for many civic technology applications. This included web-mapping, social media and text messaging. **Students will use and bring their own laptops for the workshop– this is so they know how to develop applications in their own computing environment.** This often means students will install freeware software on your computer before class. Workshops we be held in the second part of class after we review the weeks readings or homework. Workshop include:

1. Intro to Web Hosting
2. Drupal and Word Press and their plugins
3. Fundamentals of Web Mapping
4. Ushahidi – Web Mapping tutorial
5. App Inventor – Making basic Cell Phone Apps
6. Control API with IFTTT (https://ifttt.com/) – API library
7. Adding Environmental Sensor to Your Cell Phones

DUSP Viz has coordinated its Friday workshop series (12:30-2pm) to expand your knowledge and practice on the workshops taught in class. It is highly recommend to attend these DUSP Viz workshop classes, I think you will find them very useful.

1. Basic HTML and Web Site Creation
2. Website templates – Including Bootstrap.
3. Shareabouts – Web mapping software.
4. Fundamentals of Javascript
5. Stylizing Data for Web Maps

REACTION PAPERS:
While the class focuses on prototyping, I also want to have an active discussion about current trends in the fields and future possibilities. Please note that there are a few classes where I expect students to develop a 1 page reaction to the reading. Reaction papers are due, 8pm the night before the class – this gives me enough time to read them. PLEASE DO NOT WRITE MORE THAN A PAGE, reaction papers are meant to get your initial ideas and start a conversation.

STUDENT TEAMS:
Students will be grouped into teams based on their interest in working with one of our collaborators. Each collaborator will have 3-4 students in the group. Each student team should identify a student who will be the client contact in order to minimize an overload of email to our clients. Student teams should also have a project manager, which can be the point of contact or another person. This is a team based class so part of your grade is based on evaluations your team makes of each other. Pier evaluations will be given after the final presentations.

GRADING:

GRADING	
REACTION PAPERS (4)	20%
TECHNOLOGY ASSIGNMENT (4)	20%
MID-TERM PRESENATIONS :	15%
PRE-RELEASE PRESENTATIONS:	10%
OVERALL FINAL TOOL :	30%
Final presentation	20%
Final strategy document	10%
CLASS PARTICIPATION AND STUDENT EVALUATIONS:	5%
TOTAL GRADE	100%

ABBREVIATED SCHEDULE:

	Month	Day	CLASS TOPIC	In Class - Workshop	Assignment Due	DUSP Viz Workshop	Extra Mandatory
					Abbreviated Syllabus		
1	FEBRUARY	3	Introduction / Meet Clients	These are take home Workshops: 1) WebFaction Account Set-up Part. 2) Phones as Sensors.	Come to Class	HTML - Website Set-up	Set -Up Client meetings
2	FEBRUARY	10	What is Crowd Sourcing?	Drupal / Word Press	1) Reaction Paper 2) What is Crowd Sourcing ?	Bootstrap ; Java Script etc	Set -up Client meetings
3	FEBRUARY	17	No Class Meet with Clients	Fundamentals of Web Mapping - Friday Course	Student Team Must Meet with Me - Update me on Client Meetings	Web-Map Fundamentals	Student Teams Must Meet Professor
4	FEBRUARY	24	Using Maps to Gather Data	Ushahidi	1) Reaction Paper 2) Team Web-Page Complete - send link to class. With link to teams sensor data.	Shareabouts	Set -Up Client meetings
5	MARCH	3	Cell Phones & Crowd Sourcing	Fun with Cell Phones: Cell Phone Apps - App inventor - Other Text Messaging Apps.	1) Reaction Paper 2) Team Ushahidi or Shareabouts Site added to map - send class link	Java Script (fundamentals)	Student Teams Must Meet Professor
6	MARCH	10	Games and Civic Engagement	IFTTT - (Tumblr) (Story Boarding Ideas)	1) Reaction Paper 2) Groups Text Messaging App. Send Class a Survey.	Stylizing Data for Web Maps	Set -up Client Meetings
7	MARCH	17	Student Presentations	Student Mid-Term Presentations	Student Mid-Term		Student Mid-Term
8	MARCH	24	Spring Break	Spring Break	Spring Break	Spring Break	Spring Break
9	MARCH	31	Story Telling and Engagement	Vojo - Story collecting App	1) API - mix up - Data You gathered.		Student Teams Must Meet Professor
11	APRIL	7	Strategic Planning - How to Guide Clients	Adding Environmental Sensor to Phones	Work on Tool		Set -up Client meetings
10	APRIL	14	Pre-Release Presentations	Pre-Release Presentations	Pre-Release Presentations	Pre-Release Presentations	Pre-Release Presentations
12	APRIL	21	No Class Meet with Clients				Possible Release Date
13	APRIL	28	Student Reviews	Student Reviews	Student Reviews	Student Reviews	Possible Release Date
14	MAY	5	Student Work Session	Student Reviews	Student Reviews	Student Reviews	Student Teams Must Meet Professor
15	MAY	12	Student Final Presentation	Student Final Presentation	Give Strategic Plan to Clients		

2013 COLLABORATORS:

1) **Operation PayDirt (http://www.fundred.org/about/operation-paydirt.php)**

   Operation Paydirt - Operation Paydirt is a multidisciplinary initiative led by social practice artist and CoLab Mel King Community Fellow, Mel Chin, which invites children, families, and communities to imagine and actualize a future free of lead poisoning. Central to Operation Paydirt is the Fundred Dollar Bill Project, a creative campaign advancing public education, community engagement, and the use of arts to cultivate social empathy. Fundreds – original, hand-drawn interpretations of $100 bills – have been contributed by nearly a half-million community members to demonstrate the power and value of collective community expression for policy makers and the general public. The organizations want a way to engage more people in the Fundred creation as well as map the location of Fundreds. They hope Fundreds might be created digitally and they hope they way that you engage people is fun and interesting.

   Contacts:
   Allegra Williams (allegraw@mit.edu)
   Research Fellow & Program Manager Empathetic Aesthetics Program, CoLab
   Mel Chin (melchin@earthlink.net)
   Mel King Community Fellow, CoLab

2) **ERASE RACISM (http://www.eraseracismny.org/)**

   ERASE Racism is a regional organization that leads public policy advocacy campaigns and related programmatic initiatives, community organizing, and legal action to promote racial equity in areas such as housing, public school education and public health. It engages in a variety of research, education and consulting activities to identify and address institutional and structural racism, especially on Long Island.

   The want to create a technology tool that helps to both engage and collect information from their partners about issues around structural racism on Long Island. They are particularly interested in the ways they might use a game-like structure to both teach and engage their partners and record information about their overall demographics.

   Contacts:
   Elaine Gross (elaine@eraseracismny.org)
   President
   Nuzhat Quaderi (nuzhat@eraseracismny.org)
   Community Organizer

3) **Participatory Budgeting Project (PBP) (http://www.participatorybudgeting.org/)**

   Participatory budgeting (PB) is a different way to manage public money, and to engage people in government. It is a democratic process in which community members directly decide how to spend part of a public budget. It enables taxpayers to work with government to make the budget decisions that affect their lives. Through PB, residents Brainstorm Ideas, volunteers prioritize those ideas and Develop Proposals, and the public Votes on which projects to fund.

   The Participatory Budgeting Project (PBP) is a non-profit organization that empowers people to decide together how to spend public money, primarily in the US and Canada. We create and

support participatory budgeting processes that deepen democracy, build stronger communities, and make public budgets more equitable and effective.

PBP is looking for a way to integrate social media into idea collection. This process explains what types of projects can be funded through participatory budgeting and actively engages residents in brainstorming suitable projects in their community.

Contacts:
Pam Jennings (pam@participatorybudgeting.org)
Project Manager
Aseem Mulji (aseem@participatorybudgeting.org)
Data & Tech Manager

4) Digital Matatus : (http://www.digitalmatatus.com/)

A collaborative project of the University of Nairobi, Columbia University's Center for Sustainable Urban Development, MIT's Civic Data Design Lab, and Groupshot, Digital Matatus is collecting and standardizing transit data for Nairobi's Matatus, the city's decentralized city bus system, making it open and available to the public for the first time.

Digital Matatus has developed and deployed purpose-built mobile phone apps to more efficiently collect location data of Nairobi's Matatus. They have used the information gathered through this crowd sourcing method to produce standardized bus routes for the city, now assembled together and made available in a full city-wide bus map released to the public as of January of 2014.

Google has given the Digital Matatus team a small amount of funds to figure out ways in which they might be able to update and modify the data that has already been collected. They believe this might be best done, by allowing the participants to interactively draw new routes through public forums and online engagement and they would like your help setting this up.

Contacts:
Peter Waiganjo Wagacha (waiganjo@uonbi.ac.ke)
University of Nairobi
Sarah Williams (sew@mit.edu)
Civic Data Design Lab

WEEKLY SCHEDULE

WEEK 1: FEBRUARY 3th   CLASS INTRODUCTION, INTRODUCTION TO CLIENTS

In this class we will review the syllabus, and there will be an introductory lecture about the overall purpose and objective of this course. Each non-profit will present what their group does and the problem they would like the class to solve. Students will select the advocacy agency they are interested in working with. Students will see a few examples of projects from the previous course.

WORKSHOP:
Setting up WebFaction Account :
Students will need to have their own hosting site for the class. Student need to set-up a webfaction account by the next class. If you are not familiar with website and HTML you should take Friday's DUSP Viz class on the subject. You will need to update your skills.

CELL PHONE SENSORS

In the workshop we will learn how to turn our phones into sensing devices. Students will all agree to be tracked – for a short period. Your groups will make a web-site of your data during a later Workshop.

ASSIGNMENT GIVEN:
1. Set-up Webfaction account
2. Turn phone tracking on.
3. Reaction Paper #1
4. Set-up Client Meetings

WEEK 2: FEBRUARY 10th
WHAT IS CROWD SOURCING ?
COMMUNITY BASED ORGANIZING: A FORM OF ADVERTSING

In this class we will discuss the reading and begin to get a better understanding of what the term crowd sourcing means and to whom. We will also discuss community outreach and advocacy strategies. We will look at particular strategies that barrow from advertising campaigns. We will also discuss how technology has both changed the way advocacy agencies communicate with their constituents.

WORKSHOP:

In this class we will expand on your knowledge of web pages by working with web management software including Drupal and Wordpress. Students will learn how you can expand these programs for your advocacy agencies by installing and using plug-ins developed for these software packages.

It is highly encouraged that students attend the DUSP Viz workshop on Friday that expands knowledge on websites using Bootstrap. You will also learn a little Java Script.

READINGS :

Arnstein, Sherry R. (1969) "A Ladder of Citizen Participation," JAIP, Vol. 35, No. 4, July 1969, pp. 216-224. http://lithgow-schmidt.dk/sherry-arnstein/ladder-of-citizen-participation.html

Brabham, Daren C., Crowdsourcing the Public Participation Process for Planning Projects, Planning Theory, August 2009, Vol. 8 No. 3 pgs 242-262

Goodspeed: Which Crowdsourcing? http://goodspeedupdate.com/2011/3133

Evans-Cowley, Jennifer, "Micro-participation: The Role of Twitter in Promoting Engagement in Planning", February 12, 2011

Howe, Jeff (2006) 'Crowdsourcing: A Definition', Crowdsourcing: Tracking the Rise of the Amateur, Weblog, 2 June, available online at:

http://crowdsourcing.typepad.com/cs/2006/06/crowdsourcing_a.html

Malone, Thomas, et all "The Collective Intelligence Genome" , MIT Sloan Management Review, Spring 2010 http://sloanreview.mit.edu/the-magazine/2010-spring/51303/the-collective-intelligence-genome/

Palfrey, John, and Urs Gasser, "Activist" in The Digitial Divide: Arguments for and Against Facebook, Google, Texting, and the Age of Social Network, edited by Mark Bauerlein.

Rheingold, Howard, Smart Mobs: The Next Social Revolution, Basic books, 2002 -- Chapter 2

Shirky, Clay, Here Comes Everbody: The Power of Organizing Without Organizations, Penguin Books, 2009 -- Chapter 2: Sharing Anchors Community

ASSIGNMENTS DUE :
1. READING REACTION PAPER #1
2. Webfaction account must be set-up
3. We will quickly check that your data has been collected.

ASSIGNMENT GIVEN:
1. REACTION PAPER #2 : CRISIS MAPPING
2. TEAM WEBSITE DEVELOPMENT AND DATA COLLECTION
3. Set-up Client Meetings

WEEK 3: FEBRUARY 17th : NO CLASSES PRESIDENTS DAY

STUDENTS STRONGLY ENCOURAGED (PLEASE DO IT) TO TAKE DUSP VIZ COURSE WEB-MAP FUNDAMENTALS

STUDENT TEAMS MUST MEET WITH PROFESSOR TO DISCUSS PROGRESS

WEEK 4: FEBRUARY 24th
MAPPING USING THE CROWD : CRISIS MAPPING : COMMUNITY ASSET MAPPING THROUGH

In this class we will discuss a new trend to collect data from the crowd using maps. These include maps of everything from where to put a bike share program to complaints about street safety. We will also look at Crisis Mapping and a trend to using maps as a tool to crowd source needs during disaster events.

WORKSHOP:
Students will learn how to create a Ushahidi Web Site. They will also learn how to set-up **a text** messaging database that can interact with the web site.

The developer of Shareabouts a popular crowd sourcing mapping program will come on Friday during DUSP Viz (12:30-2pm) to give a workshop that allows you to set-up and instance on your Webfaction account. It is strongly encouraged that you attend this session.

READINGS DUE:

1. Okolloh, Ory, "Ushahidi, or 'testimony': Web 2.0 tools for crowdsourcing crisis information", Participatory Learning and Action, Volume 59, Number 1, June 2009 , pp. 65-70(6)
2. Crisis Mapping Blog - http://crisismappers.net/
3. Blog: If It Works in Africa, It Will Work Anywhere, Erik Hersman, 9/26/2008

4. Video: Ushahidi, Juliana Rotich, 2010
5. Article: Cybercasing the Joint: On the Privacy Implications of Geo-Tagging, Gerald Friedland & Robin Sommer, 2010
6. Report: "Oil Spill Crisis Map: Initial Analysis and Review," Louisiana Bucket Brigade: 2010.
7. Book: James Surowiecki. *The Wisdom of Crowds.* Anchor Books, New York: 2005, Chapters 1 & 2

ASSIGNMENTS DUE:

1. REACTION PAPER #2
2. TEAM WEBSITES (with your data traces included)

ASSIGNMENTS GIVEN:

1. Ushahidi or Shareabout Instance on Team Website
2. Set-up Client Meetings
3. REACTION PAPER # 3 :

WEEK 5: MARCH 3th : ORGANIZING and COLLECTIONG DATA : THROUGH CELL PHONES AND SOCIAL MEDIA
Lecture and discussion about how cell phones and social media have been used for crowd sourcing and organizing. In specific we will discuss cell phone applications they have been developed to collect data. We will also discuss notions of **citizen sensing** as part of this session.

WORKSHOP :

Students will learn how to use the App Inventor Tool – a tool that allows your to make your own cell phone applications. We will also start to discuss story boarding.

DUSP Viz workshop with be extending Java Script fundamentals.

READINGS DUE:

1. **Article: "SMS as a Tool for Election Observation," Schuler, Ian. Innovations: Vol 3; Issue 2. MIT Press. (Spring 2008).**
2. **Report: Meier, Patrick & Coyle, Diane. UN Foundation Vodaphone Report: New Technologies in Emergencies and Conflicts. (2009)**
3. **Article: Coyle, Diane and M. B. Child**s. *The Role of Mobile Phones in Disasters and Emergencie*s**: GSM Association, 2005.**
4. **Video: Erik Hersman on Reporting Crisis Through Texting, Erik Hersman, 2009**
5. **Mobile Active Web Site : http://mobileactive.org/**
6. **Background to App Inventor (http://appinventor.mit.edu/explore/learn.html)**
7. **Castells, Manuel, Networks of Outrage and Hope: Social Movements in the Internet Age, Polity Press, 2012 - Chapter 2 The Egyptian Revolution**
8. **Rheingold, Howard, Smart Mobs: The Next Social Revolution, Basic books, 2002 – Introduction and Chapter 7**

ASSIGNMENTS DUE:
1. REACTION PAPER #3
2. USHAHIDI or CROWD MAP WEB PAGES INSTALLED
3. Students teams must meet with the professor to review their progress.

ASSIGNMENTS GIVEN:

1. **Reaction Paper #4**
2. **Your first Mobile Cell Phone App**

WEEK 6: MARCH 10th : GAMES AS CIVIC ENGAGEMENT
In this class we will discuss the role of games in the development of civic applications and how people use "Big Urban Games" to discuss City Issues.

Guest Lecture : Eric Gordon – Engagement Game Lab Emmerson College

READINGS:

1) **"Part III: How Very Big Games Can Change the World" in McGongigal, Jane, Reality is Broken: Why Games Make Us Better and How They Can Change the World, Penguin Book 2011**
2) **Seth Preibatch - The Game Layer on Top of the World http://www.ted.com/talks/view/lang/eng//id/936**
3) **Gordon – Using Virtual Worls to Foster Civic Engagement http://hub2.org/placeworlds_final.pdf**
4) **BJ Fogg – Behavior Model - http://www.behaviormodel.org/ Performing a Check-in: Emerging Practices, Norms and 'Conflicts' in Location-Sharing**

5) **Using Foursquare**
   http://hcramer.files.wordpress.com/2011/06/crameretal4sqmobilehci-camerareadyfinal1.pdf
6) Gaming Can Make a Better World - http://www.iftf.org/our-work/people-technology/games/jane-mcgonigal-at-ted/
7) Institute for the Future Games ROPhttp://www.iftf.org/our-work/people-technology/games/

WORKSHOP:

In this class we will learn the popular program IFTTT (https://ifttt.com/) that allows you to access API data from various sites to create your own computer programs with-out a lot of coding. There are so many libraries to draw from your will create your own.

DUSP VIZ workshop this week will be about stylizing map data. Take if you think you might want to extend your web-mapping skills.

ASSIGNMENT DUE :

1. REACTION PAPER #4
2. GROUPS APP INVENTOR APP

ASSIGNMENT GIVEN:

1. API MIX-UP APP

WEEK 7 : MARCH 17th : STUDENT PROPOSALS PRESENTATIONS

WEEK 8 : MARCH 26th : NO CLASS SPRING BREAK :

STUDENTS SHOULD USE THIS TIME TO SET UP CLIENT MEETING.

WEEK 9 : MARCH 31 : STORY TELLING WITH CELL PHONES

Lecture and discussion will focus on using cell phones to tell stories. This can be through sending information to a text or blog , or even creating a text message history tool or other type of Urban Experience which allows us to generate a narrative about a place through mobile means.

WORKSHOP : MIT Center for Civic Media will give a demonstration of Vojo a cell phone based story telling device. (http://vojo.co/)

ASSIGNMENTS DUE:
1. API MIX UP AND RESULTS FROM YOUR MIX-UP
2. Students must meet professor this week.
3. Continued Client Engagement.

WEEK 10: APRIL 7 : STRATEGIC PLANNING

In this class we will discuss how to develop strategic plans that allow the community groups to continue to integrate the work that you are doing with after the class is over.

Workshop:
Adding Environmental Sensors to Phones.

WEEK 11: APRIL 14th : Pre-Release Presentation for Clients

WEEK 12: APRIL 21rd : No Class meet with Clients

WEEK 13: APRIL 28h : WORK SHOPPING PRESENTATIONS – MEET WITH STUDENTS

WEEK 14: MAY 5th : WORK SHOPPING PRESENTATIONS – MEET WITH STUDENTS

WEEK 15: MAY 12th : FINAL STUDENT PRESENTATION