ROYAL INSTITUTE OF TECHNOLOGY

Final Presentations Show

May 16, E1
13.00 – 17.00

Software Engineering 2013-2014

Welcome!

In this year's course in software engineering (MVK13) 16 projects have been realized. The students have worked with external clients ranging from Ericsson, Tekniska Muséet, FOI and Gapminder to a number of internal clients from different schools at KTH.

The course goal is to via practical work get experience and insights in the best practices within software engineering. The course is project based and the students work together with the clients to develop software solutions.

The projects will be presented in groups of four/hour + demo session. All in all there will be four sessions. At the end of each session, the four presented projects show their demos simultaneously in the area at the front for 15-20 mins. Everyone in the audience is invited to interact, ask questions and discuss. There will be refreshments available during every demo session.

The students have all done excellent work and are eager to show it!

Björn Thuresson thure@kth.se

Course Responsible

Schedule, Fri May 16

	13.00	**Introduction**	Björn Thuresson	
Session 1				
		Project	**Client**	**Supervisor**
	13.05	Placeholders: *Graph Visualization of Code*	Ericsson	Bärbel Janssen
	13.15	Exchange: *Videotelephone for dementia*	STH/KI	Bärbel Janssen
	13.25	HoH: *Distributed File Search*	Findwise	Aurélian Larcher
	13.35	SMAB: *Playhouse*	Håkan Lidbo	Björn Thuresson
	13.45	***Demos of projects in session 1***		
Session 2				
	14.05	A*: *KattisPlay*	Scrool	Filip Kis
	14.15	Shortcut: *Bluetooth apps*	Shortcut Labs AB	Filip Kis
	14.25	DT: *What's hAppening*	Findwise	Aurélian Larcher
	14.35	Församlingen: *Måla med ögonen*	Tekniska Muséet	Björn Thuresson
	14.45	***Demos of projects in session 2***		

Session 3

15.05	OGB: *Köhanteringssystem på CSC*	CSC/KTH	Cristi Bogdan
15.15	G1: *Visualization of Graph Databases*	FOI	Chris Peters
15.25	BSoD: *Horror Game with Eye-tracking*	Tobii	Chris Peters
15.35	Bismarck: *Dynamic Audio Tuning with Eye-tracking*	Tobii	Chris Peters
15.45	***Demos of projects in session 3***		

Session 4

16.05	U+2603: *Dr Maombi*	The Maombi Project	Björn Thuresson
16.15	Avengers: *Chaview*	Intellectus AB	Anders Lundström
16.25	Void: *WebGL Visualization of the Universe*	Sciss	Mario Romero
16.35	FoL: *Gapminder Data Kitchen*	Gapminder	Mario Romero
16.45	***Demos of projects in session 4***		

17 - 18.00 **Mingle and spontaneous demos in Ljusgården**

Session 1:1, 13.05

GROUP:	Placeholder
PROJECT:	Graph Visualization of Code
CLIENT:	Ericsson
CONTACT:	placeholder-all@googlegroups.com

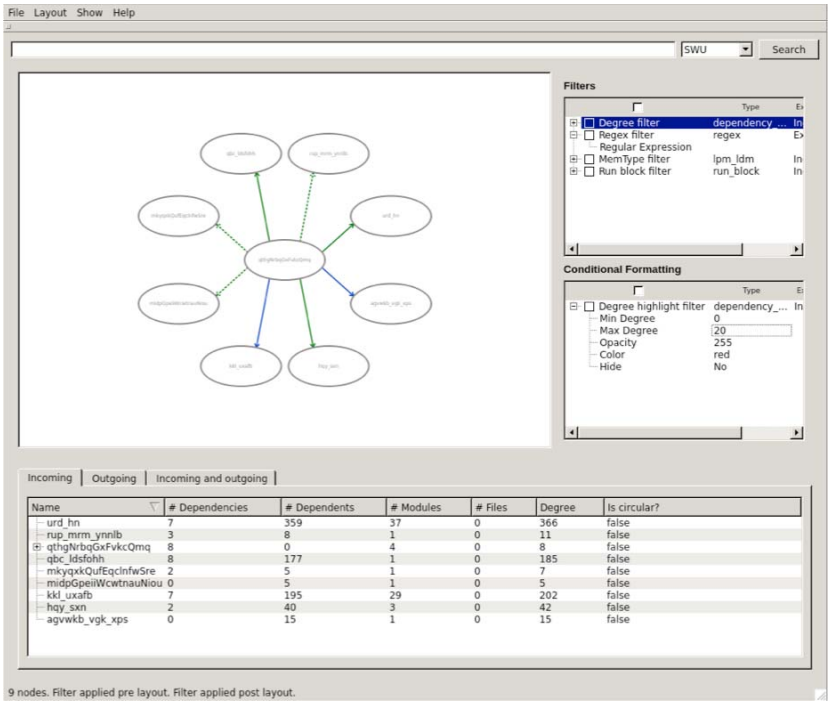
In today's LTE networks radio signals need to be encoded/decoded to ip traffic. Digital signal processors (DSP) designed to perform this task have code distributed on a local memory. Some of the application code is placed on several DSPs and some on all DSPs. There are multiple DSPs on a hardware board creating a multi core problem. The application code is also grouped in Software Units which are dependent on each other and this creates code block dependencies. Those dependencies will affect the memory placements. The problem of allocating the code is complex and is not possible to solve it optimally in reasonable time.

At Ericsson, there are heuristic algorithms that approximate a solution to the above-mentioned problem. However, it is difficult to present the relevant information to the developers in order to improve the code allocation. The tool developed by our team lets developers at Ericsson visualize code dependencies between their Software Units in a graphical representation in the form of a graph. The graph is generated from an XML file describing a build of their software. The aim is to simplify the process of analyzing those dependencies to allow for more efficient memory allocations.

The cooperation with Ericsson has been incredibly good and this project has been very rewarding and fun to work on. Ericsson has taught us much and has helped us facilitate agile development. We proudly present the result of our efforts here today.

The tool supports the following features:

- Import XML and view code dependencies between Software Units as a graph.
- Search and view dependencies for specific Software Units by their respective names.
- Compare two different builds in the form of two different XML files and visualize their differences in dependencies.
- Hide, focus or highlight certain dependencies to easily find points of interests using filters.
    - Regular expression filter
    - Degree filter
    - Memory type filter
- Export graphs to pdf or GraphViz format.



Session 1:2, 13.15

GROUP:	Exchange
PROJECT:	Videotelephone for dementia
CLIENT:	STH/KI
CONTACT:	Mira Yao Håkansson, mirayh@kth.se

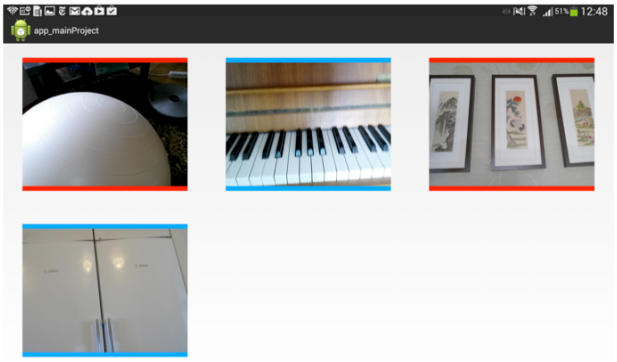
In our project we created an Android application which is meant to reduce isolation and ease communication for people with dementia.

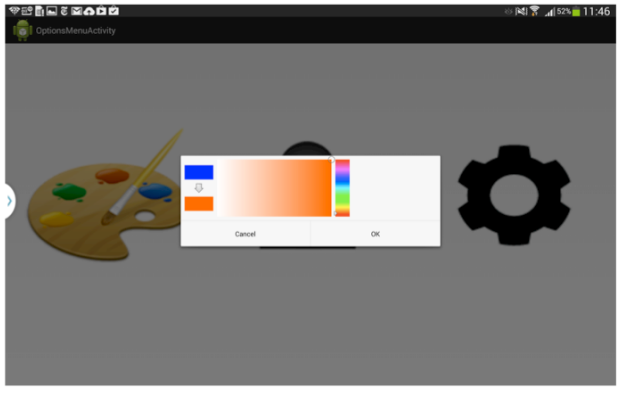
Dementia is a disease which affects the brain. It affects the memory and reduces the ability to think and reason clearly. There are an estimated over 40 million people with dementia worldwide, and the amount is increasing every day. Nearly half of all persons above the age of 85 suffer from some form of dementia. Isolation is one of the major problems for people with dementia. Regular ways of communicating like a telephone, e-mail or even regular mail are simply not suited for these people. Using a computer for communicating is way out of reach, and in many cases even a regular telephone is too complicated to be used efficiently by someone with dementia.

Our solution is an app for Android tablets that uses a very simple and straightforward, and intentionally limited user interface to be able to use the existing Skype functionality in a way that is a lot more simple and accessible. The reasons for choosing to integrate the system with the existing Skype functionality rather than creating our own system from scratch are many, firstly because the main focus of the project is to design a user interface with high levels of usability while maintaining simplicity rather than spending a lot of time to develop a video communication application, something that would require a lot of resources.

Secondly, it enables the person with dementia to communicate with a lot more people. If we made our own system, it would require all users to use that, and hence heavily limit the network of people you could call. If the user can use our simple and easy to use user interface to call anyone using Skype it means they can communicate with anyone who is using Skype and has access to a computer, tablet or smart phone regardless of the operating system or other software.

This application should be extremely easy to use and set up, and stable enough that it won't need to be maintained for longer periods, it will also include a configuration interface which will be hidden and is only meant to be accessed by someone without dementia, perhaps a friend, family member, or someone working with care of the elderly.





Session 1:3, 13.25

GROUP: HoH

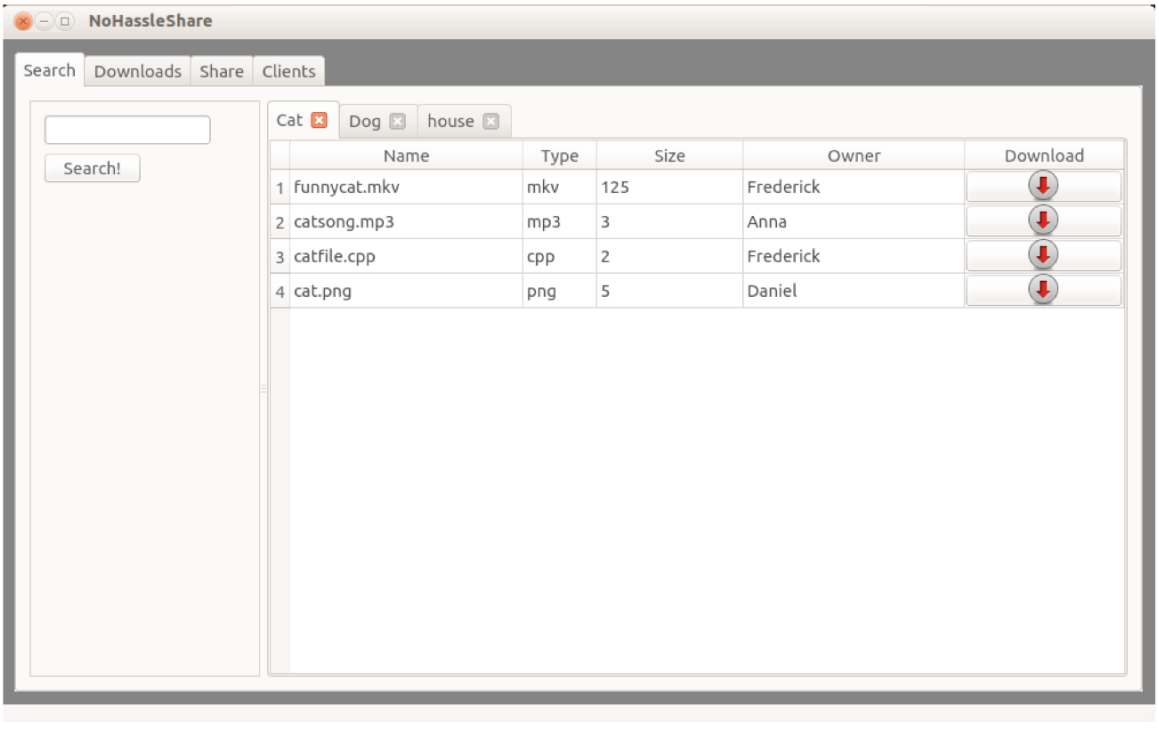
PROJECT: Distributed File Search

CLIENT: Findwise

CONTACT: Andreas Falk, andfal@kth.se, 076 – 170 72 79

Cloud based file storage and sharing is rapidly gaining popularity and is the primary choice of file distribution for a lot of people. But as it gets more popular and more frequently used, problems with cloud storage starts to reveal themselves. While 'cloud storage' might sound like a serverless environment, it is just a fancy name for availability and file servers are still used to keep files available for anyone at all times, no matter where you are. Local copies are also used for editing and creating files. This does not cause problems as long as shared files are of manageable size. But as the files grow larger, constant syncing between computers and servers starts to take a lot of time, even on a local network. To tackle this problem we implemented a distributed file search, that lets you search and share files in a serverless environment. *NoHassleShare* does not only let you search for specific file names but it also index the content of files to enable searching *in* files without downloading a local copy first. This is useful when you are working with large files in a project and don't want to waste time synchronizing with files you don't need.

NoHassleShare was developed using agile methods through two main phases. The research phase, where we decided to use C++ as our main programming language, Qt for the user interface, libjson-rpc for communication and Xapian for indexing and searching. The development phase consisted of several Scrum iterations with constant communication with the client for feedback and suggestions. *NoHassleShare* consists of three separate processes, one for the search engine, one for the user interface and one for the backend process. The modularity let us develop, test, execute and modify the processes individually and parallelly. *NoHassleShare* automatically detects changes to files in your shared folder and lets trusted users search and download your shared files. *NoHassleShare*, search and share with no hassle!



Session 1:4, 13.35

GROUP:	SMAB
PROJECT:	Playhouse
CLIENT:	Håkan Lidbo
CONTACT:	Emil Öhman, emiloh@kth.se, 0706 – 08 04 25

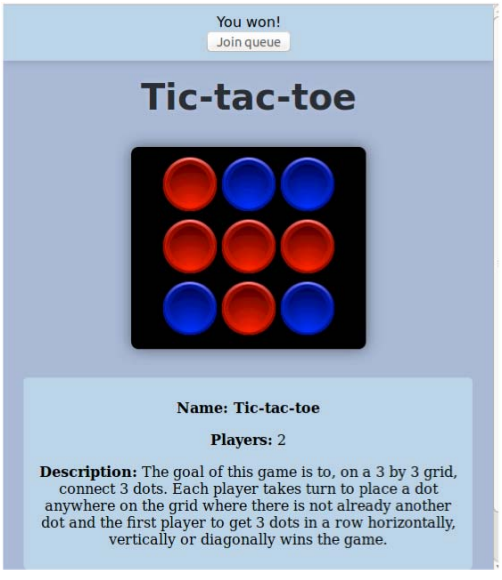
Vi har skapat ett system för att styra färgade lampor som ska sitta i fönster så att byggnaden blir en enorm interaktiv skärm som kan visa animationer och användas för att spela flertalet olika spel. Företag kan uppmärksamma sina byggnader på ett innovativt sätt och användare får delta på ett unikt sätt. När systemet är i spelläge kan spelare ställa sig i en kö via ett webbgränssnitt, där de sedan paras ihop med andra spelare för att kunna spela ett spel. Spelplanen kan visas för användaren med hjälp av en videoström av byggnaden och en virtuell spelplan för att minska problem med tidsfördröjning av videoströmmen.

Om arbetet
Vi har gjort massvis med tester för olika produkter för att se dess respektive för- och nackdelar. Valet föll på Philips Hue för vilka lampor vi skulle använda. Mycket tid har också lagts på att definiera och dokumentera projektet för att bättre veta vad som behöver göras och för att eventuellt andra personer lättare ska kunna vidareutveckla detta projekt efter kursens slut.

Vi har också gjort en lamp- samt en webbserver för att kunna styra allt. Lampservern hanterar den nuvarande lampkonfigurationen med Philips Hue bryggor och lampor samt kommunikationen mellan webbservern och Hue bryggorna. Webbservern hanterar utseendemallar och kommunicerar med lampservern.

Vi har använde externa program för att skapa lampanimationerna och programmerade en importfunktion för animationerna till spelet.
Vi har också gjort ett flertal spel och en egen köfunktion för att hantera användare.

Då det är en del olika delar som måste kommunicera med varanda har mycket tid lagts på att felsöka och rätta till eventuella buggar.



Demo session 1

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Refreshments

13.45 – 14.00

Session 2:1, 14.05

GROUP:	A*
PROJECT:	KattisPlay
CLIENT:	Scrool
CONTACT:	Eric Nellåker, nellaker@kth.se

Programming as an e-sport has been growing the past years to become an important event in many programmers lives, viewed both live and over internet streams. The company Scrool has been helping to organize and host several programming challenges, mainly through their software Kattis. Earlier Scrool has chosen to broadcast these events by hiring a third party to film and stream over the internet, but due to the cost of both hardware and personnel Scrool proposed to capture the events through a Kattis plugin utilizing webcams connected to each teams computer.

The project was developed from November 2013 by 8 students using agile methods. The software, named Kattis Play, was divided into several modules developed individually to be able to divide the workload over several servers in the event of large events, effectively avoiding bottlenecks. When each module was done the modules were connected to form the final software. The last phase of the project consisted of documentation and polish of the final product.

The resulting product allows large competitions to be streamed with ease, where the cost of the stream is only bound by how many webcams need to be used and how much the streaming service chosen costs. Tests have been run on many clients using webcams streamed to a popular streaming service.

The final version of the software will be delivered to Scrool to be utilized and developed further for use in future programming tournaments. The lowered cost to host these events will lead to more funds being available to increase the quality of the events and as such helping competitive programming grow as an e-sport.

Session 2:2, 14.15

GROUP:	Shortcut
PROJECT:	Bluetooth Apps
CLIENT:	Shortcut Labs AB
CONTACT:	Anton Meier, ameier@kth.se, 070 – 572 93 48

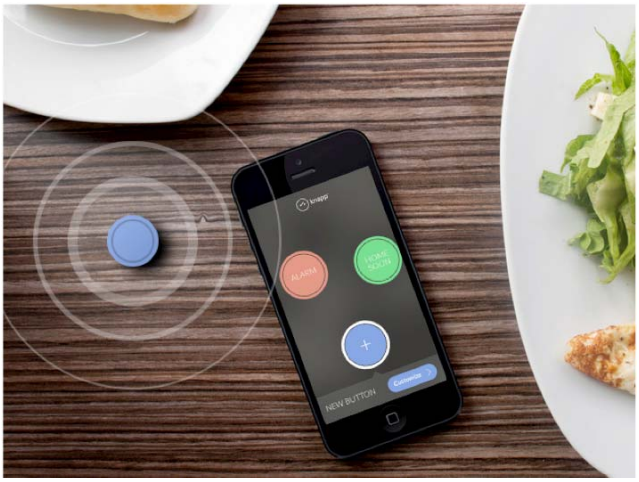
With all the functionality available to you at all time in your smartphone it is becoming increasingly more difficult to access the features that you need when you really need them the most. This is what we have set out to solve by moving the actual activation function for those features away from your screen.

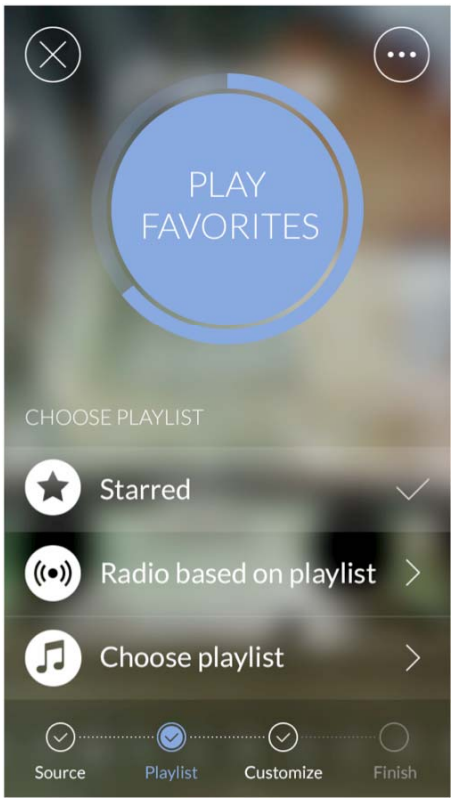
Together with our client we have created a brand new product. This product is a wireless shortcut button that you can use to control almost any function in your smart phone with just a single press. For example, press it once to start your favorite music playlist or press and hold to adjust the lighting in your apartment. Even place one in your car and press it when you want to start navigating home. There are endless possibilities, use one of our pre-defined functions, or create your own.

We are making the firmware for the actual button as well as iOS and Android applications to go along with it. But apart from that we are also developing an open API that will allow for any third party developer to implement the button into their existing or future applications. This is something that we are very excited about since a lot of neat use-cases can surface from that.

The button communicates via Bluetooth Low Energy and this will allow for years of battery life. Since this Bluetooth standard is new on the market there are not yet any competitors with the same kind of functionality as we have. There are also a lot of approachable markets for this product such as Home automation, Fitness & sport tech, Wearable tech, Car accessories, Games, Maker movement and a lot more.

Our work has already reached some publicity in articles by for example Metro, Internet World and KTH. Besides that, we have also seen great interest from companies such as Clas Ohlson, 3, Tele2, Deutche Telekom, SmartThings, CloudMade, Atooma, and more many more for possible future collaboration. So it is apparent that there is a lot of interest in this product.



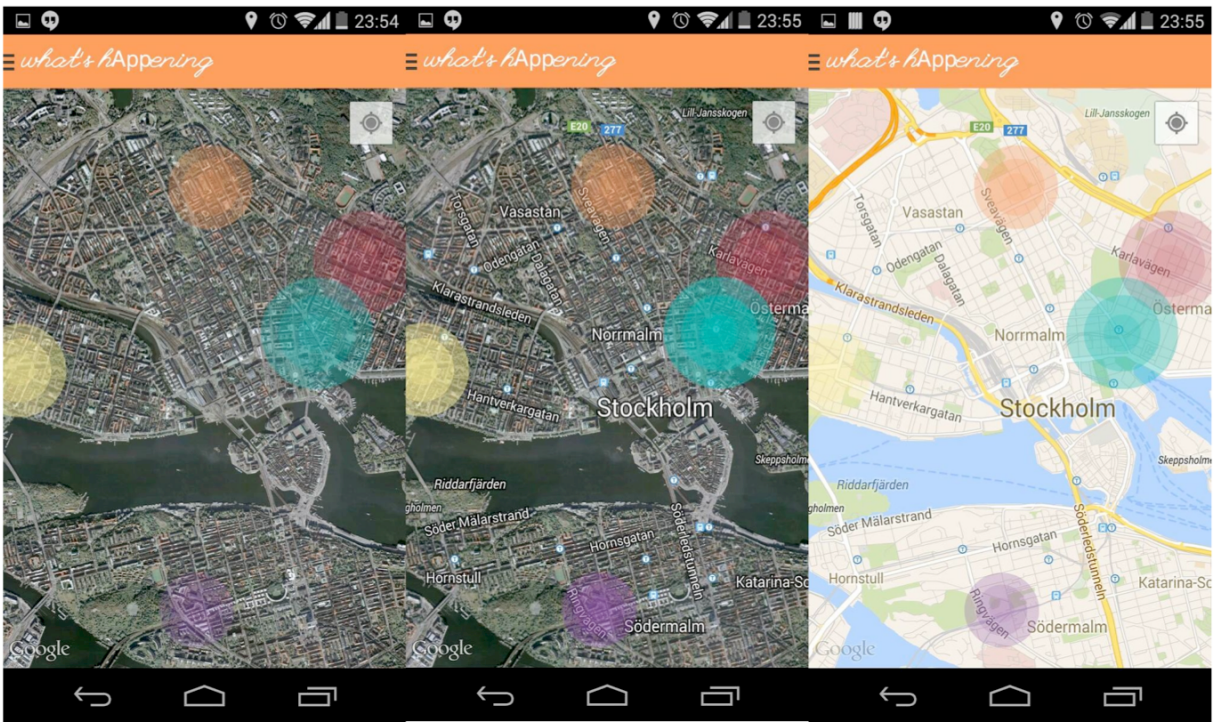


Session 2:3, 14.25

GROUP:	DT
PROJECT:	What's hAppening
CLIENT:	Findwise
CONTACT:	Ludvig Jansson, ludjan@kth.se, 0700 – 47 23 28

Ever been in town during a night out and not really known where to go? Well the *What's hAppening* app allows you to know exactly which places are really happening at the moment. This android application gathers all the published instagram posts and twitter tweets and displays the most published areas on a map, allowing you to keep track of all the largest events going on at the present moment. This project was introduced as part of the software engineering course at KTH by the IT consultancy company Findwise. A group of ten students decided to attempt to make this proposal a reality, with a few basic requirements from Findwise in mind. These requirements were that firstly the application should be an android application, the instagram posts should be displayed on a map and lastly that the posts should be gathered in so called "blobs". The application was implemented using several different elements working together. These elements can be categorized into two different areas: client side and server side. As an initial a server side script continuously polls instagram posts within a certain area, the data is stored using ElasticSearch which not only stores the data but allows one to search through it efficiently as well. This data is then handled by a clustering algorithm that clusters together the posts in order to show the areas with frequent activity. All this is done on the sever side of the application. The client side is largely based on the google maps API and a listener which makes a call to the server once a position on the map has been chosen and shows the 5 largest blobs as seen on the images below.

All the basic requirements were fulfilled and further features such as filters and incorporated tweets were added. The final product is a well built and fully functioning android application, which fulfills its purpose and which the group is very proud of.



Session 2:4, 14.35

GROUP:	Församlingen
PROJECT:	Måla med ögonen
CLIENT:	Tekniska Muséet
CONTACT:	Sophia Bäckström, sophiaba@kth.se, 070 – 5687173

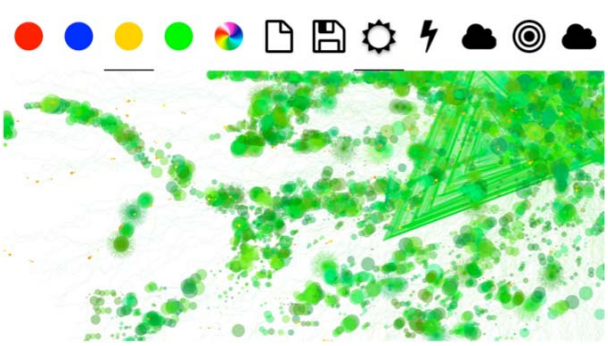
Måla med ögonen är ett samarbete med Tekniska museet där slutresultatet kommer bli en del av deras nya science center, som öppnar 2015. Temat för science centret är ”Den skapande hjärnan” och målet är att visa på hjärnans möjlighet till innovation och kreativitet. På vår station i science centret kommer barn kunna måla med ögonen med hjälp av ögonspårare som registrerar deras ögonrörelser.

En utmaning i projektet var att definiera själva uppgiften, då vi tillsammans med museet skulle ta fram konceptet. Vad innebär det att måla med ögonen? Vilka hinder och nya möjligheter uppkommer då ögonen blir ditt verktyg? Genom omvärldsanalys, användarstudier och tester med olika prototyper fick vi en allt klarare bild av vad vi ville åstadkomma.

En viktig del av arbetet har varit att göra stationen tillgänglig för så många besökare som möjligt. Därför har vi tagit in synpunkter från olika referensgrupper, som Stockholm center för Kommunikativt och Kognitivt stöd och Synskadades Riksförbund. Vi har också utfört användartester med barn med olika funktionsförutsättningar.

Vår avsikt under utvecklingen av *Måla med ögonen* har varit att museets tekniska personal lätt ska kunna underhålla programmet och bygga ut det med fler verktyg att måla med. Programmet använder sig av trigonometri och linjär algebra för att skapa dynamisk, abstrakt konst av olika valbara former och färger där du fäster blicken.

På grund av att ögonen till skillnad från händerna av naturen rör sig snabbt och oförutsägbart, ibland med något som verkar vara en egen vilja, så har vi valt att bygga ett program väldigt olikt ett konventionellt ritprogram. Användarnas olika förutsättningar har resulterat i en användarkontroll som, förutom ögonen, består av en knapp med vilken du aktiverar programmets användargränssnitt eller börjar att måla. På stationen Måla med ögonen är alla konstnärer och varje konstverk är unikt.



Demo session 2

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Refreshments

14.45 – 15.00

Session 3:1, 15.05

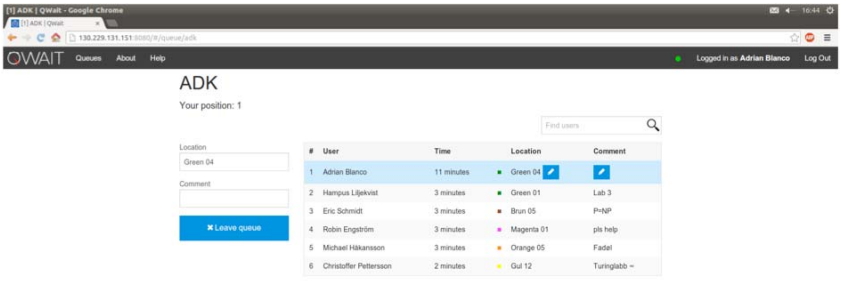
GROUP:	OGB
PROJECT:	Queueing System for Courses at the CSC School
CLIENT:	CSC/KTH
CONTACT:	Eric Schmidt, eschmidt@kth.se, 073 - 8347836

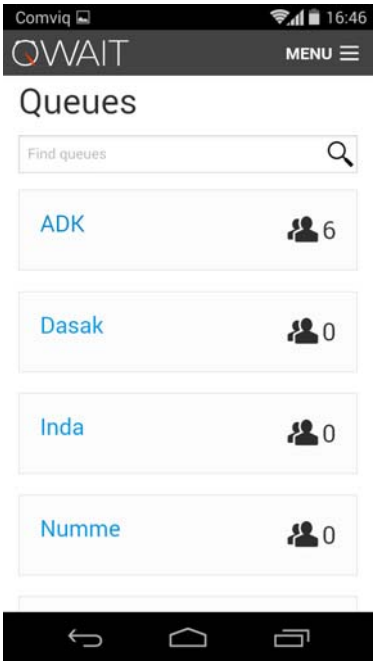
QWait

Once, there was only darkness. For the past ten years students have been forced to enter the purple and unpleasant world of Sima to present their programming labs at KTH. Now, there is light. A new queueing system has emerged from the darkness, forged in the depths of Grön. QWait, which is the name of this mighty system, will fight for the light, never letting its users down. The unstable world of Sima was uncontrollably infested with roaming insects, and no troops were there to take care of it. Sten Andersson at CSC blowed the horns of Nada and the request for aid was answered by the programming group OGB, who took on the challenge and created QWait.

QWait is built with modern web technology, including AngularJS as a frontend framework and SockJS handling websockets together with multiple fallback technologies for ancient web browsers. Using AngularJS, SockJS and Foundation the project team was able to create a responsive, modern and well designed web application. The secure and fast backend is written in Java, using Spring MVC for communication between the server and the client. The new system makes it easier to queue not only from the lab computers, but also from your own computer, tablet or smartphone. QWait also gives new possibilities for course assistants to moderate the queues using new, intuitive functionality.

Thanks to the generous soldiers of OGB, the mission of keeping the insects at bay will be passed along from generation to generation. The open source code can be found in the vaults of GitHub, making it possible for anyone to contribute in the mission of creating the best queueing system known to mankind.





Session 3:2, 15.15

GROUP: G1

PROJECT: Visualization of Graph Databases

CLIENT: FOI

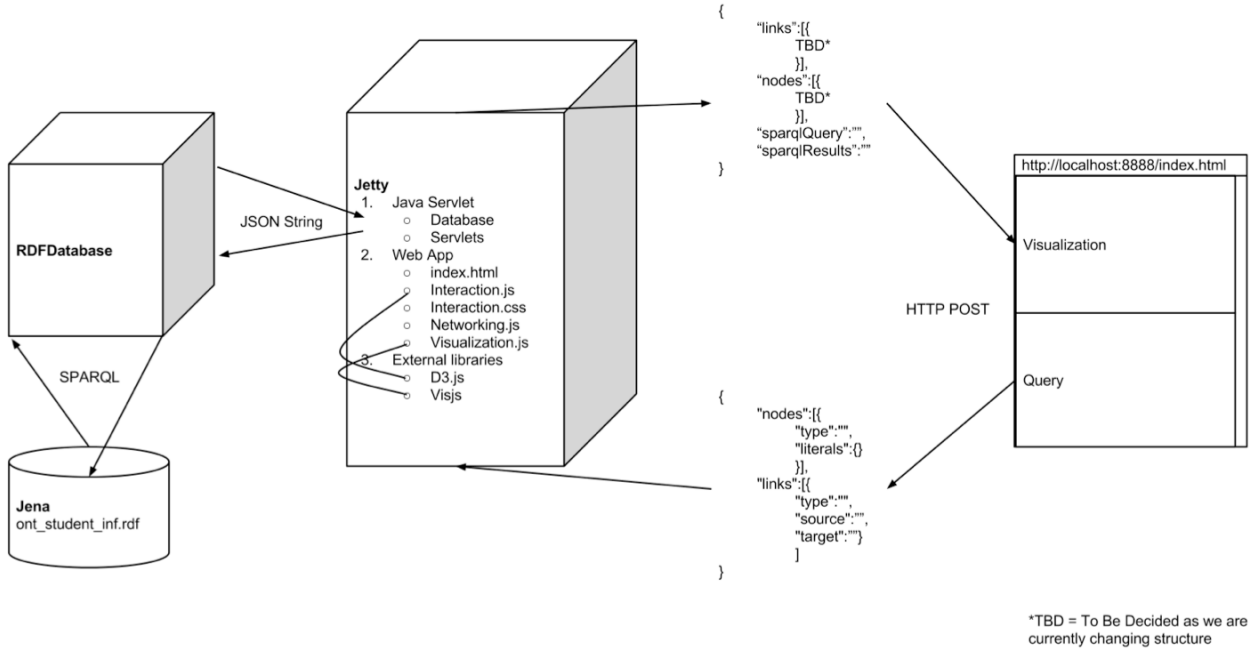
CONTACT: Jasmin Suljkic, suljkic@kth.se

GraphVis is a project to help inexperienced users to search and visualise data from a graph database. ”Big data” is commonly stored in graph databases and it is usually easy to store different types of data in a graph database format. However, searching in a graph database is similar to querying a relational database from a command line interface. GraphVis aims to improve upon this by providing a graphical search utility including a graphical representation of the search result.

Our implementation of the GraphVis project turned out as described in the figure below. The Jetty-server connects the RDF-database through a graphical interface to the user. The interface will provide the user with a query window and a visualization window. The query made by the user in the query window will be sent as a JSON-string to the Jetty-server and from there it is sent forward to the RDF-database as a SPARQL query. The visualization window will present the user with the returned graph. It can be customized with different colour schemes for improving clarification, depending on the given database.

The project has resulted in a working prototype, a prototype that serves to prove the concept: that query construction and data interpretation for the user can be made much simpler and more efficient in comparison to using traditional text based query construction and result presentation. However this prototype still leaves room for further improvement and development in areas such as: system efficiency, where the system performance can be optimised for high scalability as well as the more important aspect, usability where the user interface could be made more user friendly and even simpler and easier to use.

Project is available for demo and testing purposes until 2014-05-19 at:
http://g1.bounceme.net:8888/



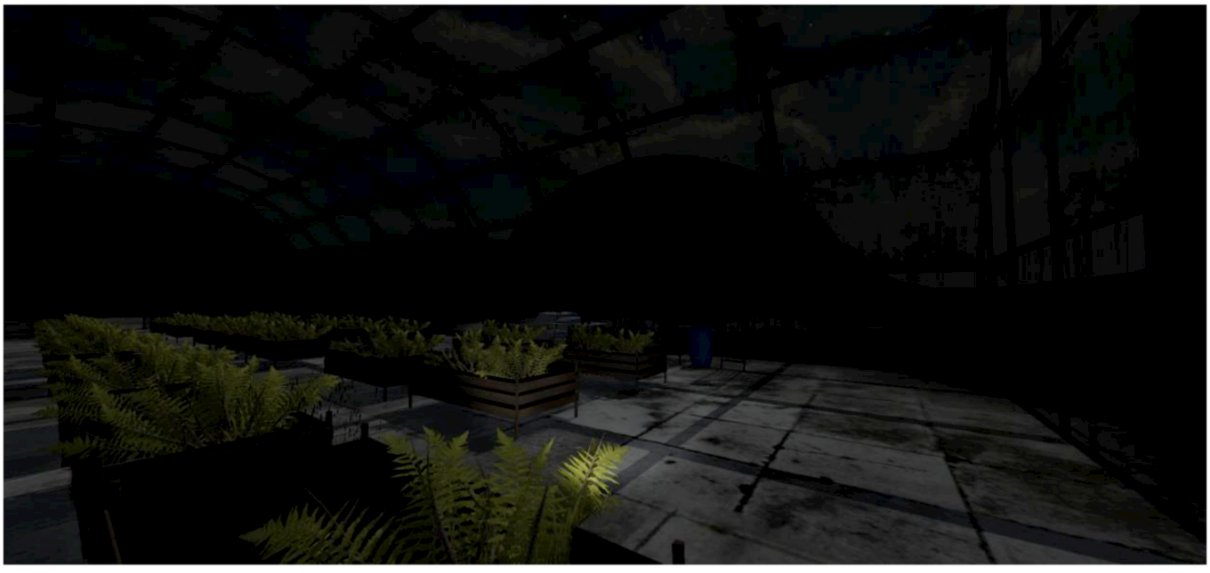
Session 3:3, 15.25

GROUP:	BSoD
PROJECT:	Horror Game Utilizing Eye-tracking
CLIENT:	Tobii
CONTACT:	Eric Molin, ericmol@kth.se, 0763 – 11 90 44

Tobii har utvecklat en eye tracker som med hjälp av kamera, belysare och mjukvara kan beräkna var användaren tittar på skärmen. Projektet Horror Game Utilizing Eyetracking går ut på utforska hur man kan använda sig av eye tracking inom skräckspel för att förstärka spelupplevelsen. Eye tracking är inte tänkt att ersätta mus eller tangentbord, utan istället fungera som ett komplement för att förstärka vissa effekter. Eye trackern ska fungera för de flesta, även om man har ett visst handikapp så som glasögon, linser eller nedsatt syn. Så vi valde att sammanställa våra resultat i en teknikdemo i form av ett skräckspel, eftersom ett renodlat spel hade blivit för stort för ändamålet.

Vi valde att använde oss av en vattenfalls-liknande process som arbetsmetod, eftersom att det gav oss extremt hög flexibilitet att snabbt implementera olika idéer. Detta tillät dessutom oss att arbeta väldigt individuellt, så antalet gruppmöten kunde hållas väldigt lågt, tills det var aktuellt att sammanställa olika implementeringar. Angående inspiration hämtade vi diverse idéer från andra skräckspel och tänkte ut hur man skulle kunna implementera eye tracking i dessa scenarion för att höja känslan hos spelaren.

Hela demot är implementerat i Unity och vi har skapat de flesta av modellerna i spelet. Själva demot utspelar sig i ett växthus som består utav tre olika nivåer där spelaren får gå runt fritt genom en linjär spelmiljö, som innehåller diverse olika implementationer av eye tracking, såsom att stolar reser på sig när man tittar på dem eller att ögon i mörker försvinner så fort man tittar på dem. Vi testade även att ersätta tangentbord och mus genom att kunna öppna dörrar med eye tracking. De flesta implementationerna funkade relativt bra men ju mindre ytorna blev som igångsättarna placerades på desto sämre responstid blev det på implementationerna.



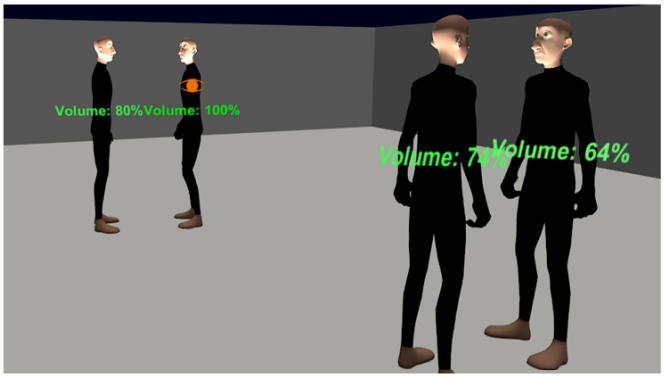
Session 3:4, 15.35

GROUP:	Bismarck
PROJECT:	Dynamic Audio Tuning with Eye-tracking
CLIENT:	Tobii
CONTACT:	Sofia Brené, sbrene@kth.se, 0704 – 92 69 51

We are a group of seven students that has been working on creating a tech demo for Tobii, a Swedish company working with eye tracking technology. The demo aims to show and inspire game developers on how to use eye tracking equipment to enhance user experiences in video games. Our main focus has been on aural experiences, creating and altering new and existing sounds in a game environment depending on the user's gaze. Examples include the cocktail party effect, in which sound sources that the user focuses on become clearer in an otherwise noisy surrounding. Another example is something we call a dynamic conversation. This concept tries to change the behaviour of virtual characters depending on the user's gaze. Looking at a painting while being close to a character might for example trigger a verbal response from the character, acknowledging that the user has looked at the painting.

Our work has culminated in a small concept gallery which showcases a few of the concepts we came up with in a scaled back and plain environment. This is to make it very clear exactly what our concepts do, how they use the eye tracking technology and how their parameters and variables can be manipulated by a developer to create different interesting effects. Lastly we have also made an end scene, incorporating all concepts in a more detailed environment. The idea behind the end scene is to show how the concepts can be used in a more subtle way, akin to have a game developer would use our concepts in their own software.

To achieve all this we have been developing the project using a methodology inspired by Scrum, an agile development model. This has meant that we have been working in an iterative manner, keeping a close contact with our client Tobii to receive input on our progress and continuous direction on what we should focus on. Internally, our group has worked with fluid roles to better match the iterative process, while still maintaining defined overall responsibilities for each group member. We hope you enjoy our presentation, and remember to check out our demo afterwards!



Demo session 3

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Refreshments

15.45 – 16.00

Session 4:1, 16.05

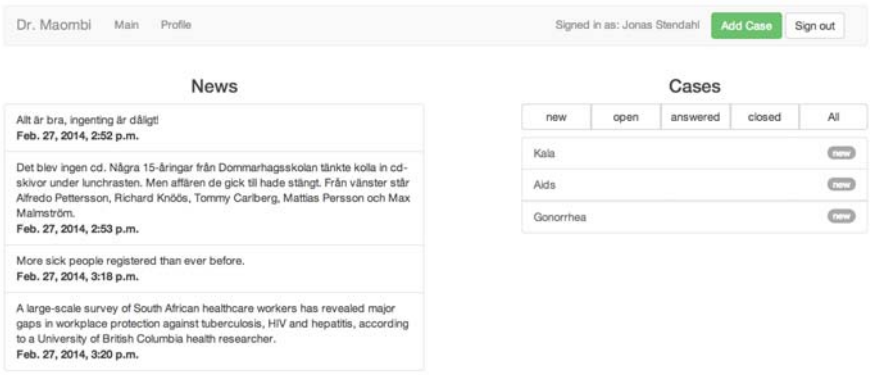
GROUP: U+2603
PROJECT: Dr Maombi
CLIENT: The Maombi Project
CONTACT: Johan Arnör, jarnor@kth.se, 073-5020548

The Maombi project aims to build a bridge between medical doctors in big city hospitals and medically trained staff, clinic officers, in the rural areas of development countries. The trained personnel may not have the knowledge needed to treat all diseases but with help from medical doctors they could do a huge difference. To accomodate this, the Maombi project has led to the creation of a communications service comprised of a website and a web service that Android devices has the ability to communicate with.

The given model is to allow smaller facilities to communicate medical data seamlessly to the city hospitals which they can respond to, all done through the Internet. This includes most non-urgent health issues of varying types.

The communication itself is designed to accomodate whatever means of communication suits the user best, whether this is taking a picture, recording vocal statements or just typing directly into the device.

The devices are also able to operate offline and then performing synchronization with the server to allow the system to work in all intended environments, some of them lacking a reliable 3G network or other source of Internet connection.



Session 4:2, 16.15

GROUP:	Avengers
PROJECT:	Chaview
CLIENT:	Intellectus AB
CONTACT:	Erik Norell, eriknore@kth.se, 0708 – 943 543

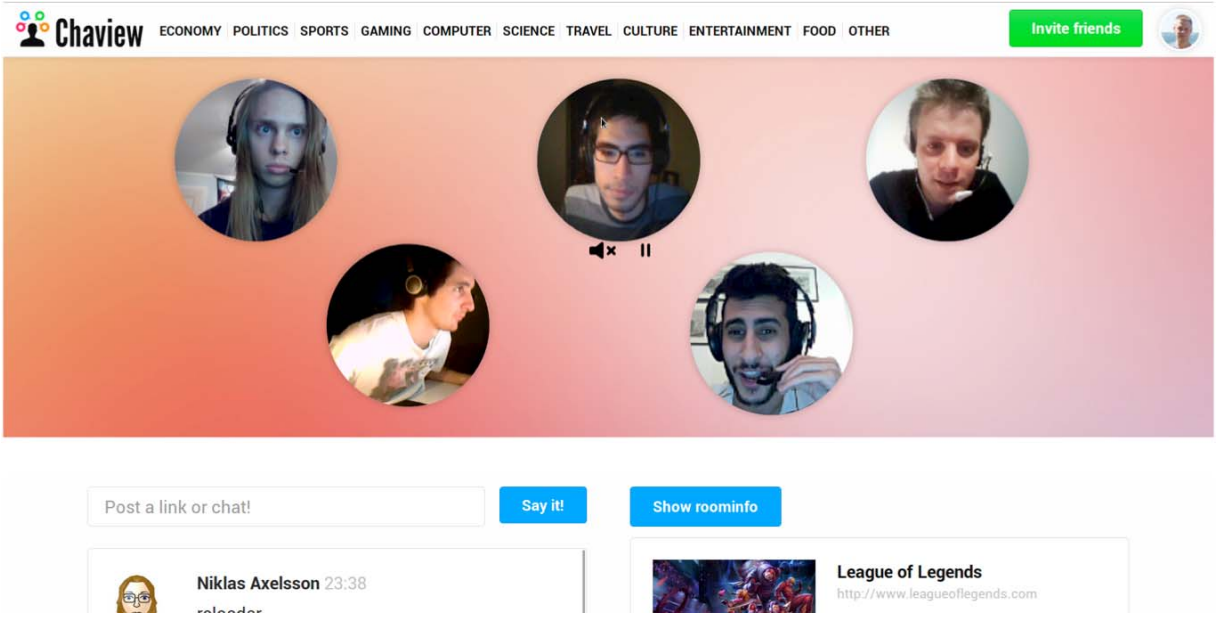
Ever seen a Facebook post that led to an energetic debate and long posts? Maybe a long interesting forum thread? Wanted to participate but felt that you didn't had the time nor the energy? That's why we want to introduce Chaview - a simpler platform for personal meetings.

If it's only to meet and discuss, just to talk to a friend, because you've met someone at a nightclub, or because you want to be able to talk directly with your online gaming friends - we want you to try out Chaview. No need to install any programs. No need to install a plugin to your browser. No need to add persons to your contact list. Using your browser, just go to our webpage, create a room and share the link with anyone - it's that easy!

This is our vision of a new web application called Chaview that we have started to realize. Utilizing new technique called WebRTC, which will be included in the HTML5-standard, video, audio and data can be shared directly between users (peer-to-peer). This means audio and video conversations, screen sharing and file transfers - all available with just an HTML5 supported browser[1].

This is not just great news for the users. Utilizing peer-to-peer connections, these audio, video and data streams never touches a server, enabling all these services with only the use of a lightweight server.

Alpha-version currently available at http://217.208.205.2. Hope to see you there!



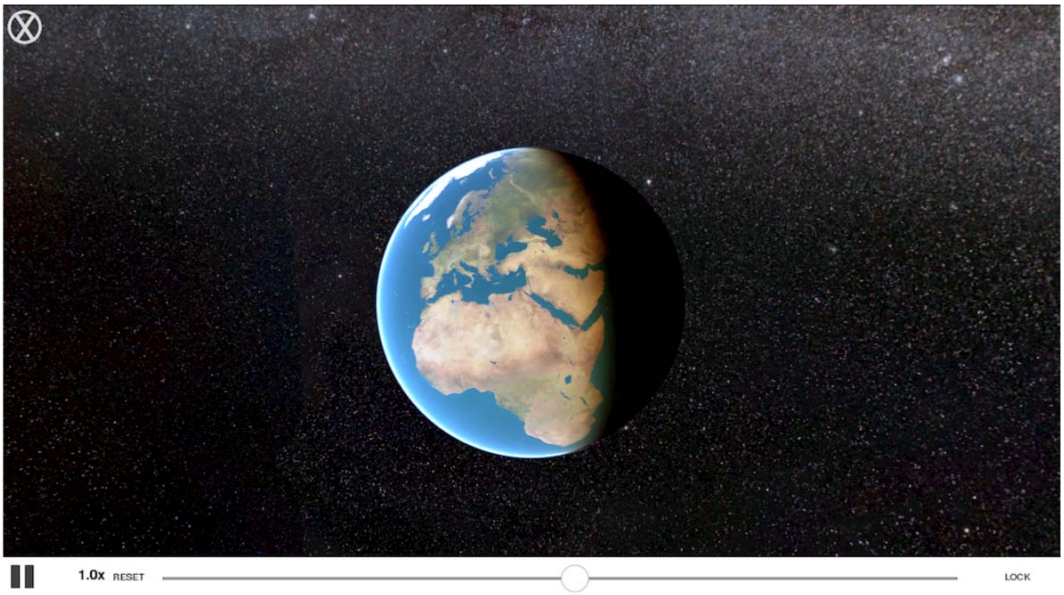
[1] Currently supported browsers: Mozilla Firefox, Google Chrome, Opera and Chromium

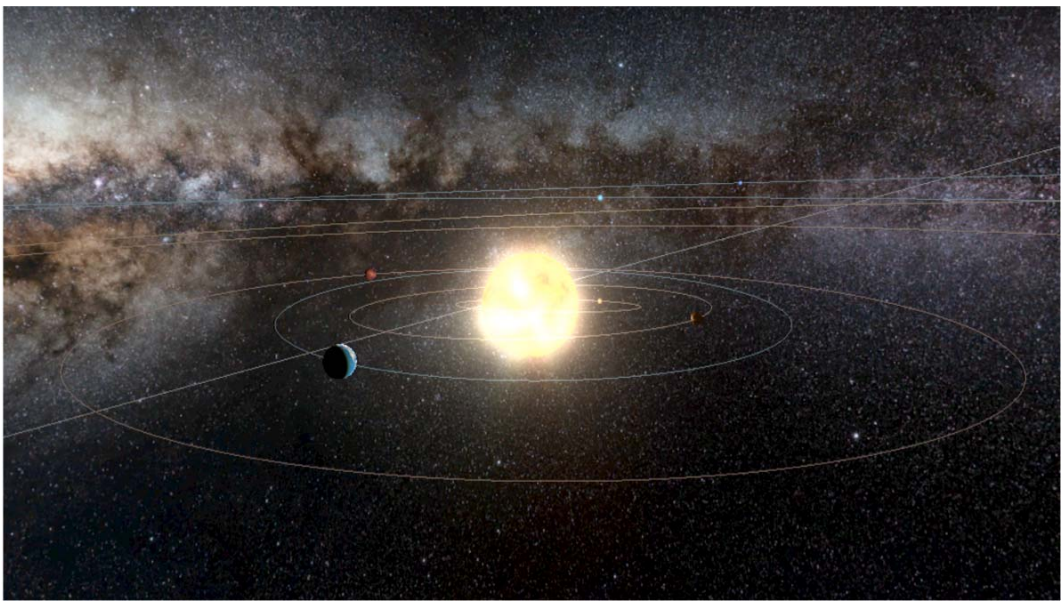
Session 4:3, 16.25

GROUP:	Void
PROJECT:	WebGL Visualization of the Universe
CLIENT:	Sciss
CONTACT:	Henrik Hygerth, hygerth@kth.se

For over four hundred years, since the days of Galileo Galilei, mankind has assembled an atlas of the observed universe. This project is a lightweight engine for loading a visualization of the universe. This engine can be included in websites as an interactive model for the users to interact with. It is made accessible to the user through WebGL and JavaScript, which means that it is compatible with most modern web browsers and available on many different devices on the consumer market.

The engine features a camera which can rotate, zoom and navigate to objects in the scene. The user can enter and leave new scenes, making it possible to show different sets of information. For interacting with objects, the user can drag objects which changes the time. The user can also change the movement speed with a slider. This will give users the ability to explore the universe and acquire new knowledge and understanding of what the universe looks like and how it works.





Session 4:4, 16.35

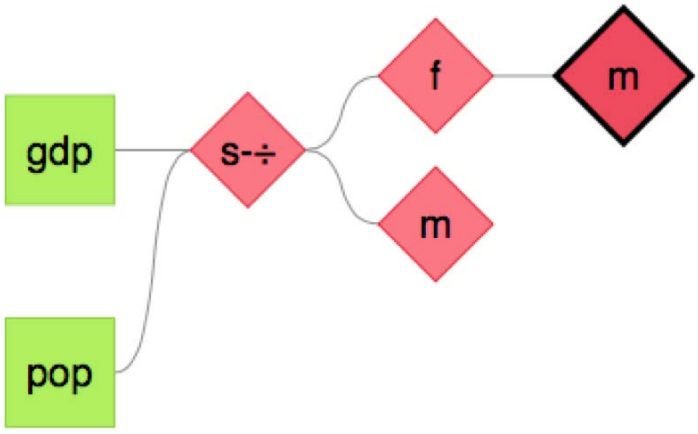
GROUP:	FoL
PROJECT:	Gapminder Data Kitchen
CLIENT:	Gapminder
CONTACT:	Love Ekstam Ljusegren, lekstam@kth.se, 0703 – 62 50 42

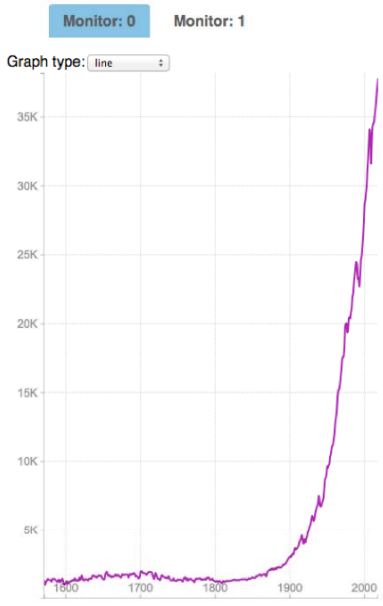
The goal of the Datakitchen project is to supply statisticians with a tool to manipulate and combine large data sets in a new, powerful way. When dealing with statistics, there are not a lot of tools to choose between; the most common one by far is, of course, Microsoft Excel. When dealing with large data sets and combining statistics from different sources however, it leaves much to be desired. This is where the Datakitchen comes in: with Datakitchen you have several advantages over traditional software for these tasks. The main ones being **easy manipulation of large datasets**, **transparency** and ease of **importing and exporting** projects.

- The Datakitchen is meant to ease working with large datasets, instead of working with the individual datapoints, procedures are by default applied on entire collections or subsets of your data. It is also made in a way so that it's very easy to import data from previous projects, to use as source data in new projects.

- The Datakitchen supports transparency in two major ways, metadata and data history. Unlike most data manipulation tools, the Datakitchen keeps track of every change to every point of data in its projects, giving absolute transparency of manipulations made to keep data reliable. It also provides great support for metadata, with users being able to add comments to their operations and notes from source data being tracked all the way throughout the project.

The idea for this project was to create a tool that was able to combine statistics from different sources and make them comparable throughout calculations. We wanted to create a tool for expert users where they had the possibility to combine different projects, try different calculations at the same time, creating their own procedures for the calculations. All this and more while keeping track of everything they do with a simple chart view with objects representing all steps. During all steps you're also able to show your data in graphs, giving you live feedback on what your result looks like.





Demo session 4

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Refreshments

16.45 – 17.00

Mingle and spontaneous demos and discussions in Ljusgården

17.00 – 18.00

Congratulations to all the students and thank you to the clients and the supervisors.