

University of Surrey

Department of Computing

Faculty of Engineering & Physical Sciences

COM3001 Professional Project

Project Idea: Pinboard website

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Overview

- Present situation (the problem)
- Project Idea
- Project objective & goal statement
- Project Benefits, ROI Statement
- Project Stakeholders
- Background knowledge
- Technical investigation
- Planning
- References
- Discussion/Answering questions

Present situation (the problem)

Nowadays, electronic mail is the predominant digital communication platform.

85%

of human population is connected online and communicate through email despite the number of social channels available. (Reuter's survey [1])



100 billions

emails send and received daily [2]

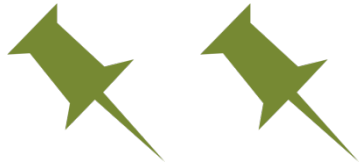


97.4 billions

are **spam** emails [3]

The question is: What leads to the creation of so many “spam” emails **within the university environment?**

Project Idea



The creation of a **Pinboard** solution
(in the form of web application)
as a method to
minimize the number of “spam” emails send
and received daily
within the University of Surrey .

Project objective & goal statement



The **objective** of the project is:

the creation of a dynamic Web application (Pinboard) as a university-specific outlet (an organised way to sell second hand goods) and therefore **minimize the number of “spam emails”** sent within the university environment.

Personal Objectives:

Get experience on:

- Full development lifecycle(management, development and delivery of a project).
- Multi-device applications.
- Spring Framework technologies.



The solution has the potential to significantly reduce the number of emails send between students regarding **second-hand books and room swaps**.

Additional functionalities can enrich the search user experience by offering a number of browsing categories like unwanted tickets for events, bicycles, electronics etc.

Project Benefits, ROI Statement



Introducing a **new communication channel** that will allow the students to:

- sell second-hand books (and other equipment),
- search for housemates/swap rooms on campus.

This will help:

- minimize the creation of “**spam/junk emails**” regarding second-hand books, room swaps etc.
- replace of the physical Pin-boards located around the campus, **reduce paper copies** and **promote environmental friendly behavior**.
- reduce **network traffic** and disk space used by “spam” emails.



The Pinboard solution will enhance the quality of student experience with the use of multimedia and make students requests/hunt for houses and books **easier**.

Project Stakeholders



- A subset of University of Surrey students:
 - A group of volunteers that wish to test the application and are interested in the functionalities that the application offers.



- Steve Wesemeyer:
 - Lecturer: Final Year Project supervisor and coordinator.



- Chara Katiri:
 - Computer Science Student: project manager and developer.



- University of Surrey IT and Service Desk:
 - The support team.

Background Knowledge

Investigation of open source e-commerce solutions like eBay, Etsy, Amazon:	How is my solution different from the existing websites:
Open and available to everyone.	Targets students and is available only to University of Surrey students and staff.
Basket functionality.	Bookmark functionality.
Integration with PayPal.	Students are located on campus and payments will be made in person.
Delivery services.	Students are located on campus and deliveries will be made in person (meeting between the students).

Technical Investigation



- **Application type:**
 - Dynamic Web application.
 - Scalable for use on a variety of devices and screen sizes.



- **Availability:**
 - Hosted on the University of Surrey intranet.



- **Security:**
 - Authentication against **login** using the University of Surrey email address to restrict access to students & staff of the university.
 - Use of Hypertext Transfer Protocol Secure (**HTTPS**) as a communication protocol for secure communication over the network.
 - Use of **Spring Framework** to enable cross-platform use of the application.

Technical Investigation cont.



- **Technologies:**

- Client and Server side development using Java and Spring MVC framework.



- **Architecture:**

- The architecture of the developed application will be separated in several layers to support the needs of the application:
 - Presentation Layer: JSP views and presentation of data (**HTML5**, **CSS**).
 - Security layer: authentication and authorization supplied by **Spring Security Framework** and HTTPS.
 - Business logic: Spring Framework controllers.
 - Database layer: Web server, Application server, MySQL.

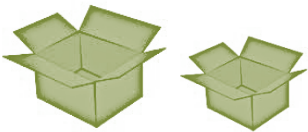
Technical Investigation cont.

Key issues for the project:



- **Users profile:**

- Keep the user's profile secure and ensure that other users can't edit it.

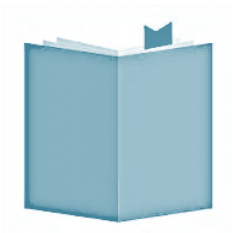


- **Update the products list:**

- Make the new items visible:
 - update the list of products to include the last uploaded items.
- Expire the sold items:
 - update the list of products to exclude the last purchased/sold items.

- **The nature of the products:**

- Each product is unique (quantity 1).



- **Use of Spring MVC framework:**

- Is a learning curve.

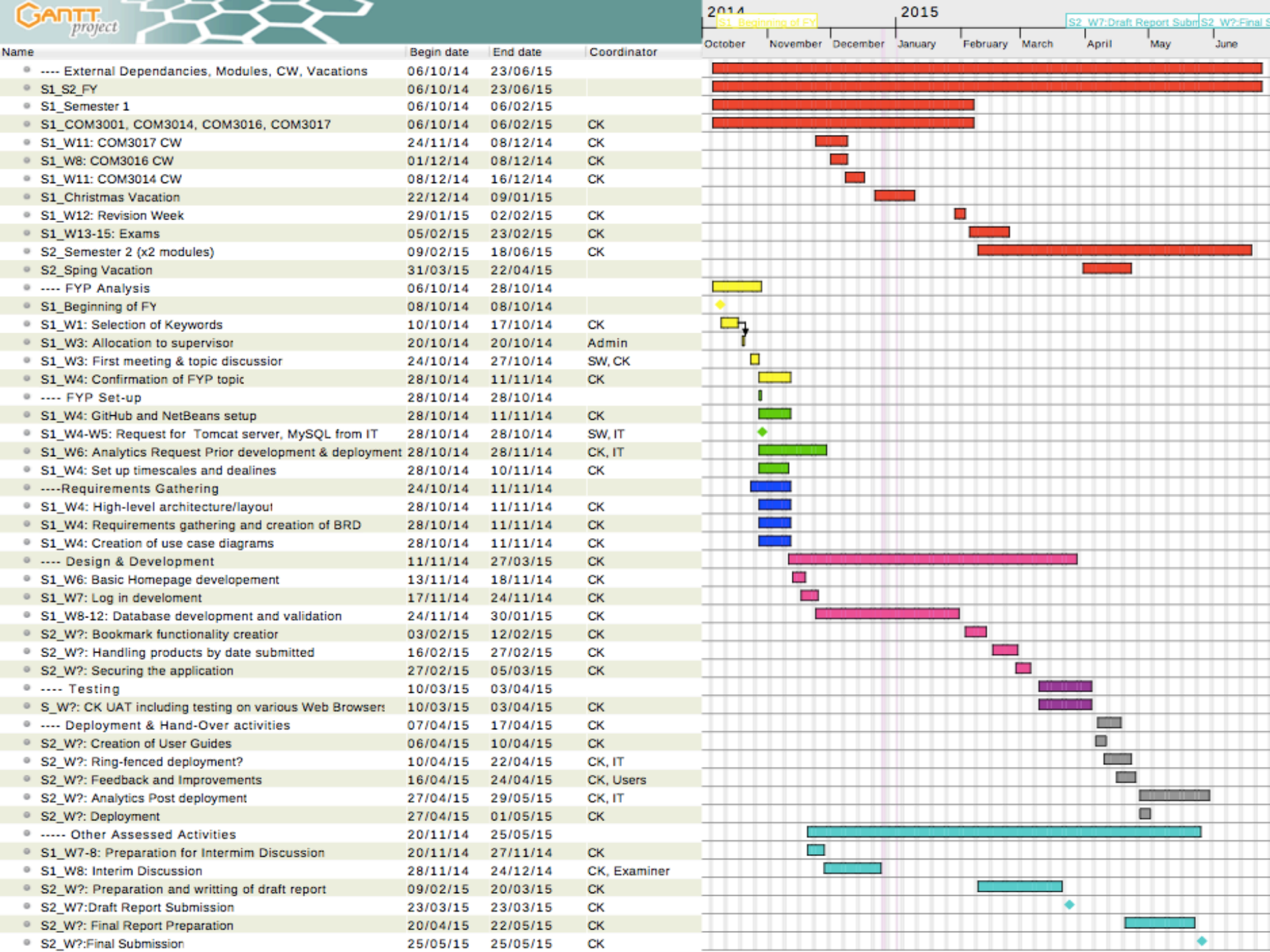
- Host the website on a web server. In this case, if the solution is not accepted for deployment it can still be tested by volunteers.

Planning



- Development following **Waterfall** approach: major steps divided in achievable chunks.
- For visual prototypes, Rapid Application Development can be followed to keep the stakeholders engaged and receive feedback in early stages of the development lifecycle.
 - Planning
 - Requirements Analysis
 - Design
 - Development
 - Testing
 - Implementation
 - Maintenance
- Evaluation of goals.





Planning cont.



Potential risks:

- Time constraints due to 5 other modules that run in parallel with COM3001. All the modules are assessed based on at least one Coursework and an Exam.
- **Timescales** for set up, development and deployment are aggressive to meet the demands of FYP deadlines and deliveries.
 - **Contingency plan** to mitigate risks:
 - Timescales were set with the work required by other modules in mind.
 - If for any reason timescales shift then requirements categorized as ‘**Could**’ will not be implemented.
- Is possible for the Systems Team not to accept the proposed Pinboard solution. If the solution can’t be deployed to the intranet, no data can be collected neither **analytics** can be created to measure the effectiveness of the proposed solution to minimize “spam” emails.
- UAT depends on testers being available when required (CS students, **volunteers**).
- End user expectations unrealistic compared to solution.
 - **Contingency plan** to mitigate risks:
 - Rapid Application Development (RAD) can be followed for visual prototypes, to keep the stakeholders engaged and receive feedback in early stages of the development lifecycle.



References

- [1] Reuters, (2014). *Most of world interconnected through email and social media*. [Online] Available from: <http://www.reuters.com/article/2012/03/27/uk-socialmedia-online-poll-idUSLNE82Q02120120327> [Accessed 03/11/2014].
- [2] The Radicati Group Inc., (2013). *Email Statistics Report, 2013-2017*. [Online] Available from: <http://www.radicati.com/wp/wp-content/uploads/2013/04/Email-Statistics-Report-2013-2017-Executive-Summary.pdf> [Accessed: 03/11/2014]
- [3] Esecurityplanet.com, (2014). *Almost 100 Billion Spam E-mails Sent Daily in Q1 2013 - eSecurity Planet*. [Online] Available at: <http://www.esecurityplanet.com/network-security/almost-100-billion-spam-e-mails-sent-daily-in-q1-2013.html> [Accessed 3 Nov. 2014].

Closing

- Questions?
- Remarks
- Comments