University of Surrey
Department of Computing

Faculty of Engineering & Physical Sciences

COM3001 Professional Project

Project Idea: Pinboard website

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- Project Idea
- Project objective & goal statement
- Project Benefits, ROI Statement
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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

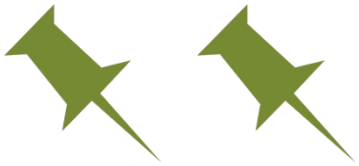
emails send and received daily [2]

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.

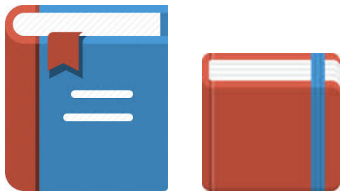
Project Benefits, ROI Statement

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.

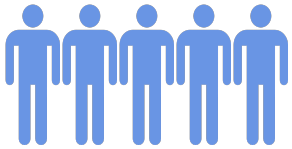
This will help:

- 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.

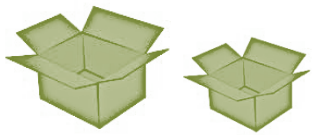
- **Technologies**:
  - Client and Server side development using Java and Spring MVC framework.

- **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.

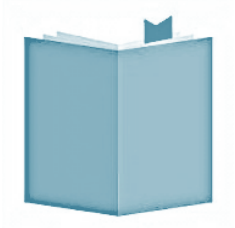
Technical Investigation cont.

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).

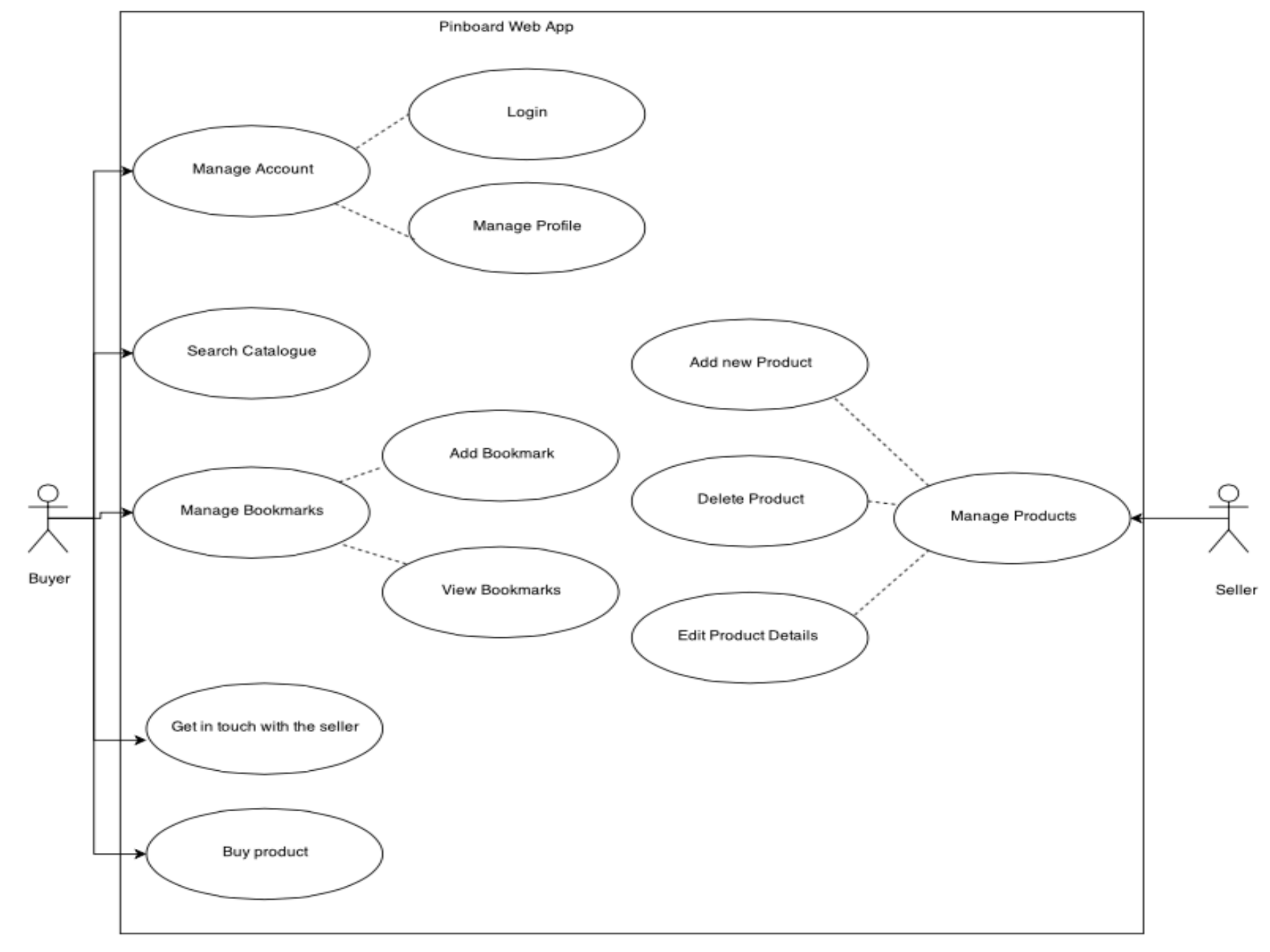


- **Use of Spring MVC framework:**
  - Is a learning curve.

- 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.

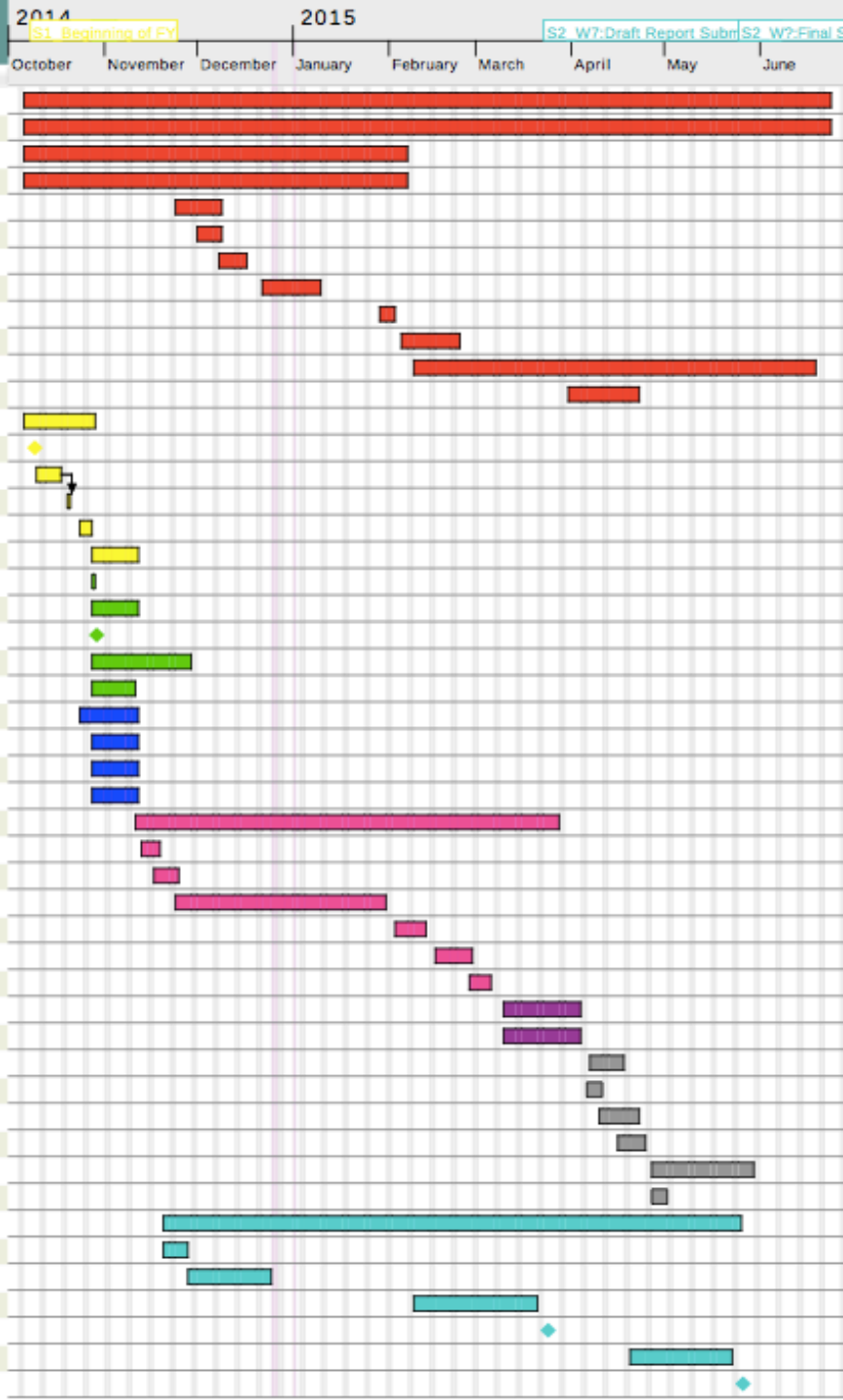
Planning

- 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.


Pinboard Web App
Login
Manage Account
Manage Profile
Search Catalogue
Add new Product
Add Bookmark
Manage Bookmarks
Delete Product
Manage Products
View Bookmarks
Edit Product Details
Get in touch with the seller
Buy product
Buyer
Seller

GANTT project

Name	Begin date	End date	Coordinator
---- External Dependancies, Modules, CW, Vacations	06/10/14	23/06/15	
S1_S2_FY	06/10/14	23/06/15	
S1_Semester 1	06/10/14	06/02/15	
S1_COM3001, COM3014, COM3016, COM3017	06/10/14	06/02/15	CK
S1_W11: COM3017 CW	24/11/14	08/12/14	CK
S1_W8: COM3016 CW	01/12/14	08/12/14	CK
S1_W11: COM3014 CW	08/12/14	16/12/14	CK
S1_Christmas Vacation	22/12/14	09/01/15	
S1_W12: Revision Week	29/01/15	02/02/15	CK
S1_W13-15: Exams	05/02/15	23/02/15	CK
S2_Semester 2 (x2 modules)	09/02/15	18/06/15	CK
S2_Sping Vacation	31/03/15	22/04/15	
---- FYP Analysis	06/10/14	28/10/14	
S1_Beginning of FY	08/10/14	08/10/14	
S1_W1: Selection of Keywords	10/10/14	17/10/14	CK
S1_W3: Allocation to supervisor	20/10/14	20/10/14	Admin
S1_W3: First meeting & topic discussior	24/10/14	27/10/14	SW, CK
S1_W4: Confirmation of FYP topic	28/10/14	11/11/14	CK
---- FYP Set-up	28/10/14	28/10/14	
S1_W4: GitHub and NetBeans setup	28/10/14	11/11/14	CK
S1_W4-W5: Request for Tomcat server, MySQL from IT	28/10/14	28/10/14	SW, IT
S1_W6: Analytics Request Prior development & deployment	28/10/14	28/11/14	CK, IT
S1_W4: Set up timescales and dealines	28/10/14	10/11/14	CK
----Requirements Gathering	24/10/14	11/11/14	
S1_W4: High-level architecture/layout	28/10/14	11/11/14	CK
S1_W4: Requirements gathering and creation of BRD	28/10/14	11/11/14	CK
S1_W4: Creation of use case diagrams	28/10/14	11/11/14	CK
---- Design & Development	11/11/14	27/03/15	CK
S1_W6: Basic Homepage developement	13/11/14	18/11/14	CK
S1_W7: Log in develoment	17/11/14	24/11/14	CK
S1_W8-12: Database development and validation	24/11/14	30/01/15	CK
S2_W?: Bookmark functionality creatior	03/02/15	12/02/15	CK
S2_W?: Handling products by date submitted	16/02/15	27/02/15	CK
S2_W?: Securing the application	27/02/15	05/03/15	CK
---- Testing	10/03/15	03/04/15	
S_W?: CK UAT including testing on various Web Browsers	10/03/15	03/04/15	CK
---- Deployment & Hand-Over activities	07/04/15	17/04/15	CK
S2_W?: Creation of User Guides	06/04/15	10/04/15	CK
S2_W?: Ring-fenced deployment?	10/04/15	22/04/15	CK, IT
S2_W?: Feedback and Improvements	16/04/15	24/04/15	CK, Users
S2_W?: Analytics Post deployment	27/04/15	29/05/15	CK, IT
S2_W?: Deployment	27/04/15	01/05/15	CK
----- Other Assessed Activities	20/11/14	25/05/15	
S1_W7-8: Preparation for Intermim Discussion	20/11/14	27/11/14	CK
S1_W8: Interim Discussion	28/11/14	24/12/14	CK, Examiner
S2_W?: Preparation and writting of draft report	09/02/15	20/03/15	CK
S2_W7:Draft Report Submission	23/03/15	23/03/15	CK
S2_W?: Final Report Preparation	20/04/15	22/05/15	CK
S2_W?:Final Submission	25/05/15	25/05/15	CK



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 Pinboad 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