



Student Log

Project: The Squawk System and Software Architecture

Name: -----
Class/tutor group: -----

This log is for you to record your work as you complete the Squawk project. There are pages inside this document that are related to the activities and tasks you will complete along the way. You will find that Kirsty – the software architect - and Dominic – the software developer - refer to them throughout the project. Make sure you keep your log up to date – your teacher may need it to assess your work.

A reminder – what’s the brief?

You are going to work through the software architecture behind a social media application that keeps you up to date with all your friends without any need to touch your phone. You will work with a technical architect to work out the best solution, and hear how a software developer starts to plan the build of the application.

The e-learning module will guide you through the project, checking your understanding along the way. Complete the e-learning and gain the **Squawk Software Architect** Open Badge in the **Tech Partnership Badge Academy**.

Resources – what you can use to complete the project

You have a bank of resources to help you with this project. These are:

- > E-learning module with video and activities to test your understanding
- > Briefing documents on the proposals for the system solution, and an explanation of the pros and cons of each
- > Template of a SWOT analysis for you to complete



Activity 1: Understanding Squawk and what is already out there

Building on Existing Technology

What technology do you know that could form the basis of Squawk? Something existing that we can build on?

Record your ideas below:

Activity 2: Understanding Squawk and how it is different

What is different here?

What does Squawk do that is different from existing technology?

Record your ideas below:



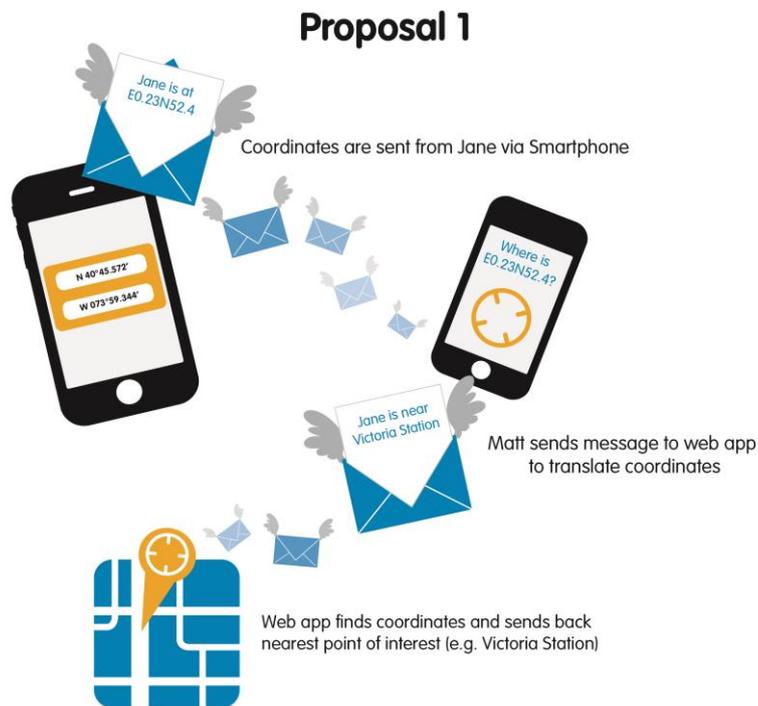
Activity 3: Four proposals for the Squawk system

In the next activity, you are going to look at four different proposals for how the Squawk system translates coordinates to something the user can recognize.

Although we have inserted the proposals into this log, when working in your groups to discuss the proposals, you will find it easier to download them from the resources area of the website. You can work with the documents in your group and then come back to this log to make any notes about your decisions and findings.



Proposal 1



Summary of proposal 1

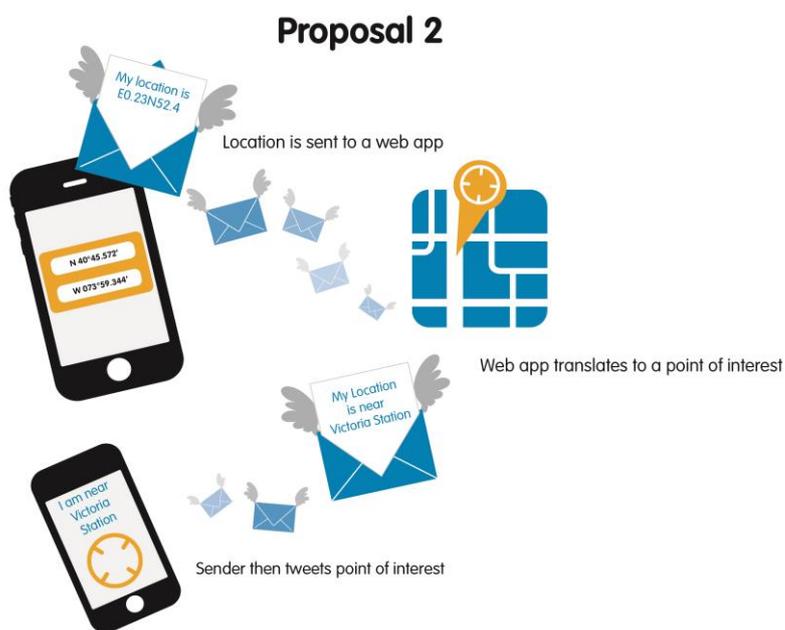
- Sender tweets map coordinates
- Receivers (who follow sender on Twitter) send coordinates to a web app
- Web app translates the coordinates to a point of interest (POI)

Note, web app is a map website that allows you to look up map locations and find nearby points of interest (POIs). POIs can be tourist attractions, restaurants, hospitals, etc. Some map websites also provide street and town names.

Your notes:



Proposal 2



Summary of proposal 2

- Sender sends their location to a web app
- Sender receives a point of interest (POI) from web app
- Sender tweets location as a POI to followers

Note, web app is a map website that allows you to look up map locations and find nearby points of interest (POIs). POIs can be tourist attractions, restaurants, hospitals, etc. Some map websites also provide street and town names.

Your notes:



Proposal 3

Proposal 3

Each phone has an internal map



The sender translates the location internally



Sender then tweets point of interest

Summary of proposal 3

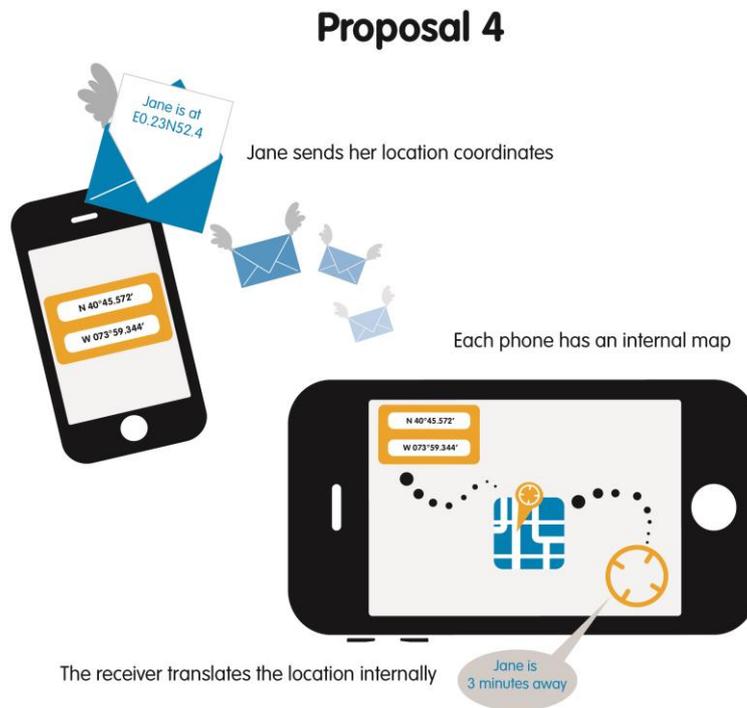
- Each phone has an internal map
- Sender translates the location internally

Note, this proposal uses maps that are inside the phones. But, maps require huge amount of memory! More maps = less space for music, video, pictures and apps.

Your notes:



Proposal 4



Summary of proposal 4

- Each phone has an internal map
- The receiver translates the location internally

Note, this proposal uses maps that are inside the phones. But, maps require huge amount of memory! More maps = less space for music, video, pictures and apps.

Your notes:



Activity 4: Your choice of solution

The Architecture Solution

We have chosen this solution because...

Activity 5: How are the messages triggered?

Triggering the messages

My solution to this is...



Activity 6: The software architectural process

Review of the Architectural Process

Add information to each of the headings. You can stop the video if you need to as you fill information under each heading.

Scenarios

Priorities

Separation

Comparison of alternatives



Example of a SWOT analysis

SWOT analysis of a high street music store	
Strengths <p>They have staff working there who really know music and can advise customers.</p> <p>Staff know about different genres of music (e.g. classical, rock, folk) so they can cater for a range of musical tastes.</p> <p>They have a good location right next door to a busy supermarket.</p>	Weaknesses <p>The store isn't big enough to stock absolutely everything customers want so sometimes they have to order items which can take a couple of days to arrive.</p> <p>They can't always offer the cheapest prices like the larger outlets because they don't have a huge turnover of CDs or DVDs.</p>
Opportunities <p>They have started to sell books as well as CDs, DVDs and vinyl records, and those have proved very popular.</p> <p>There is the possibility of opening another store in a new out-of-town mall that is opening three miles away.</p>	Threats <p>Music downloads and online retailers can be cheaper and more convenient.</p> <p>The supermarket next door could start selling CDs and DVDs.</p>

Activity 7: Completing the SWOT analysis for Squawk

SWOT for Squawk	
Strengths	Weaknesses
Opportunities	Threats



Activity 8: Looking at backlogs

Backlogs

Which of the two rehearsal plans do you think will generate the best performance?

Rehearsal plan 1: Romeo and Juliet

March: Rehearse Act I until words, actions and emotions are perfectly portrayed

April: Rehearse Act II until words, actions and emotions are perfectly portrayed

May: Rehearse Act III until words, actions and emotions are perfectly portrayed

June: Perform play

Rehearsal plan 2: Romeo and Juliet

March: Read through whole play so actors know what it's about and remember some lines

April: Rehearse whole play until actors remember most of lines

May: Rehearse whole play until words, actions and emotions are well portrayed

June: Perform play

Explain your choice here:

Which way is the best way to paint a masterpiece?

If you ran out of time (or money), you might only get so far through a project.

In both the play and the painting example, what would happen if you couldn't finish the project?

Look at the rehearsal plans and the painting example – which is the best backlog to use to make sure that you still have something even if you don't get to the end?



The Squawk backlog

Below is Dominic's backlog – the list of different tasks that he will need to organise and implement to build the Squawk system.

Put them in order using ranks 1 to 8. Remember that:

- some tasks will need others to be completed before they can start
- you need to think whether if you couldn't get to the last few steps, you could still manage to produce a working product

Your rank	Tasks	Dominic's rank
	Location can be sent to Twitter as a text	
	Receiver automatically decides which friends to state estimated time of arrival (ETA) for based on how close they are and which direction they are moving	
	Location can be sent at regular intervals	
	Receiver of a location can get the distance between the sender and the receiver and the spoken text gives this distance	
	User has option whether to send to Twitter, Facebook or both	
	Incoming texts are heard as synthesized speech	
	Receiver of a location hears an ETA which is calculated based on assumed steady progress	
	Location is sent as the name of a point of interest, in addition to the map coordinates	

When you have completed this, check your backlog with Dominic's (your teacher knows Dominic's order) and enter his ranks into the table. Can you see why yours and his are different (if they are!)?

Keep going for the learning outcomes for this project!



Learning outcomes for the Squawk project

At the end of the Squawk project, go through this list and tick the boxes you feel you have achieved. If you think of any that we haven't included here, add them at the end!

Learning outcomes	Tick when achieved
Explore how existing technology can be exploited and developed to create a new application	
Understand what tasks are required to create a new application from existing technology	
Understand how GPS data can be used to produce useable speech-based location information through a smart phone	
Understand how to interpret technical architecture proposals and make judgments about the advantages and disadvantages of each	
Find a solution to how a system can be developed to trigger message production and dispatch automatically, with minimal user intervention	
Understand how to break down a larger problem into smaller and simpler problems and tasks to come to a solution (e.g. the Squawk solution)	
Understand how to carry out a review of the architectural process and what the key steps are in the review	
Understand what a SWOT analysis is and how to perform one on a given problem or decision	
Understand how to interpret a SWOT analysis and make a decision about whether to go ahead with a project or decision based upon the answers it generates	
Understand what a backlog is and how to produce a backlog that will generate a solution or product even if the project fails to reach completion	
Work together with others to discuss proposals and ideas and reach a conclusion	
Gain insight into the techniques, processes and issues involved in software design and development	
Understand more about the roles of a software/technical architect and a software developer	
Record your progress in completing a project by using the Student Log for notes, ideas, solutions and answers to tasks and activities	