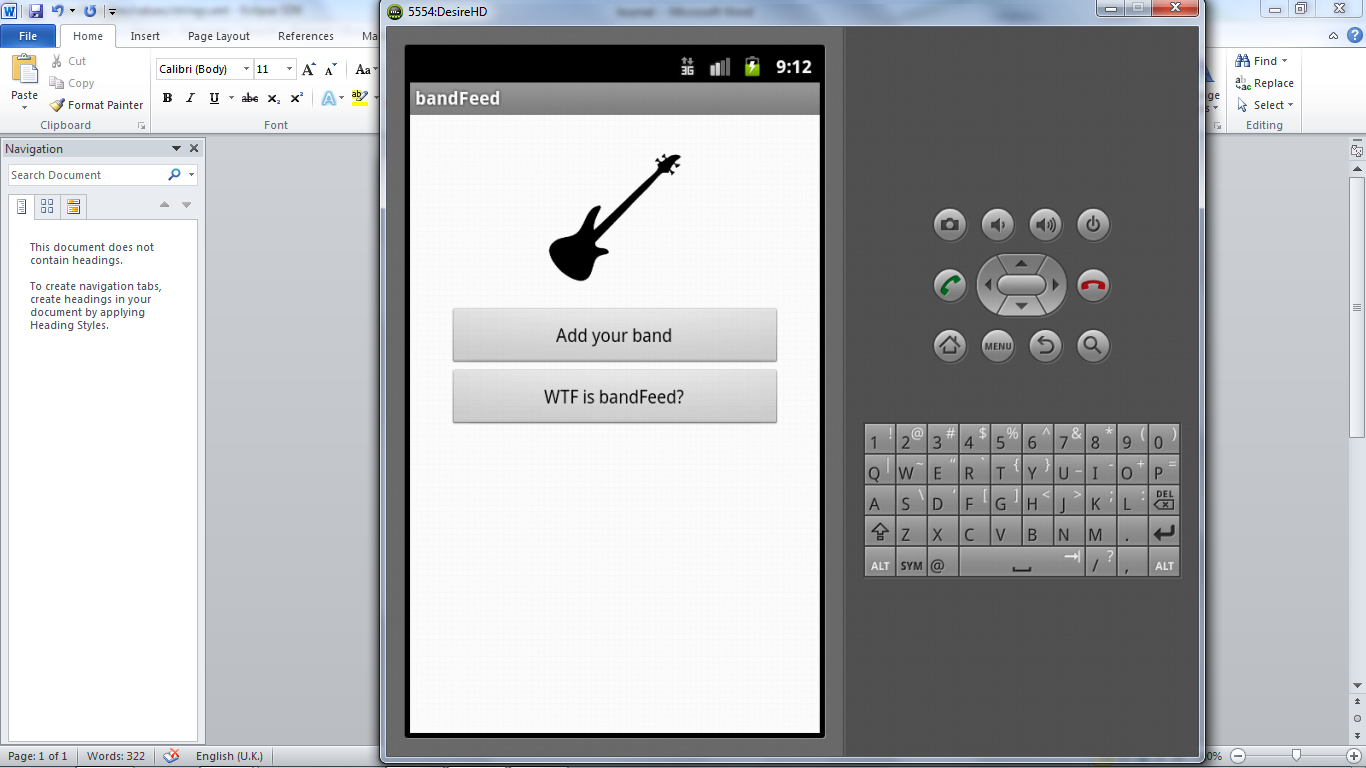
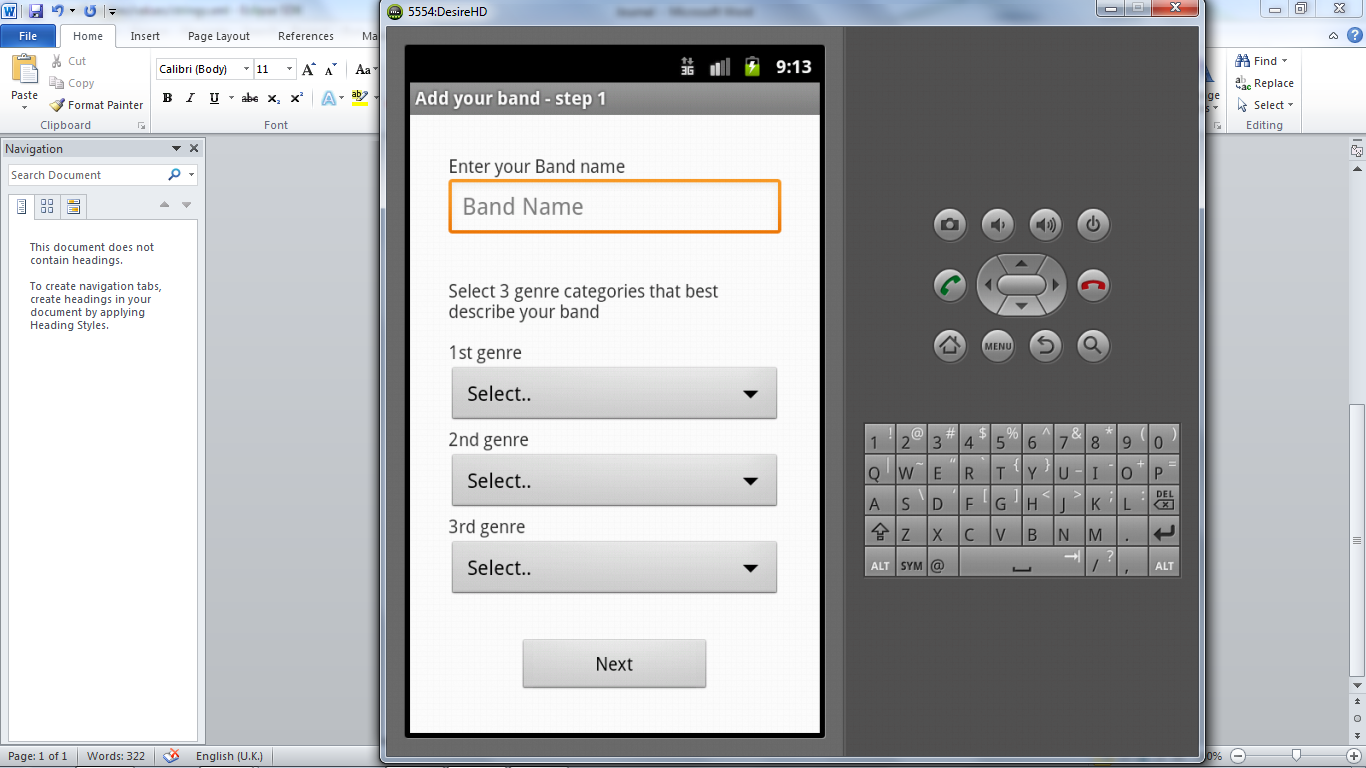
30/07/2012 – Saw Martin, discussed ideas. Started work on an Android app. <http://www.zazzle.co.uk/bass_guitar_bassist_card-137539554697266595> for app icon.

**Prototype 1**

01/08/2012 – Started working on Band app. Implemented the Main class which asks the user whether they wish to add their new band, view WTF (about page), or if the user has already added a band their band will be listed to be selected. These are all 3 buttons which take the user to another activity. ‘Add New Band’ button takes you to the activity\_step\_one.xml (the first step of setting up a band profile), ‘WTF’ button takes you to the activity\_wtf.xml (which is an about page).

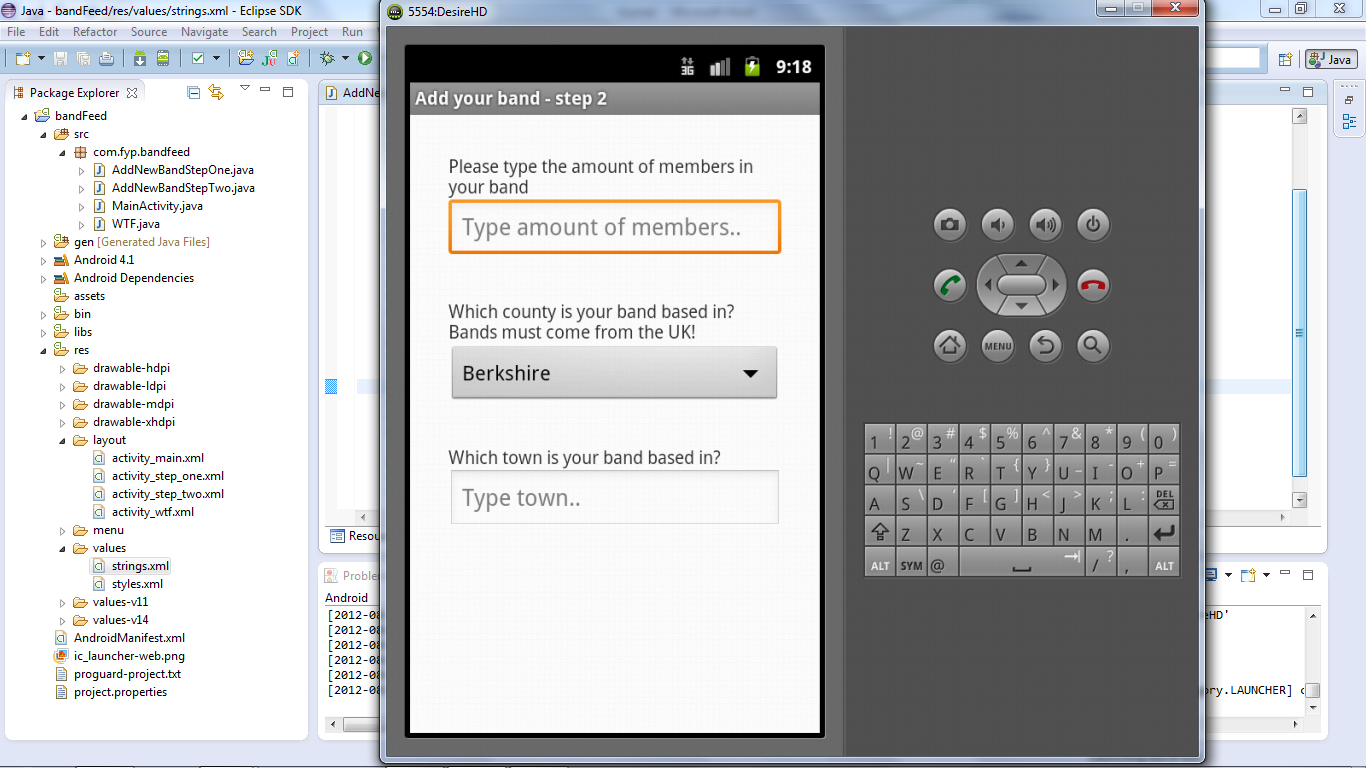


02/08/2012 – Added Spinners (drop down boxes) to the activity\_step\_one.xml to allow the user to select 3 genres that best describe their band. I had to work out how to incorporate a standard Java ArrayList to a spinner (formed in XML). The result was that I had to use an adapter to add the String objects held in the arrayList to the spinner. Latter into the project I may draw the genre data from an external course such as SoundCloud. A button was used which displays the text ‘Next’, this takes the user to the next step of setting up a band profile (see below).



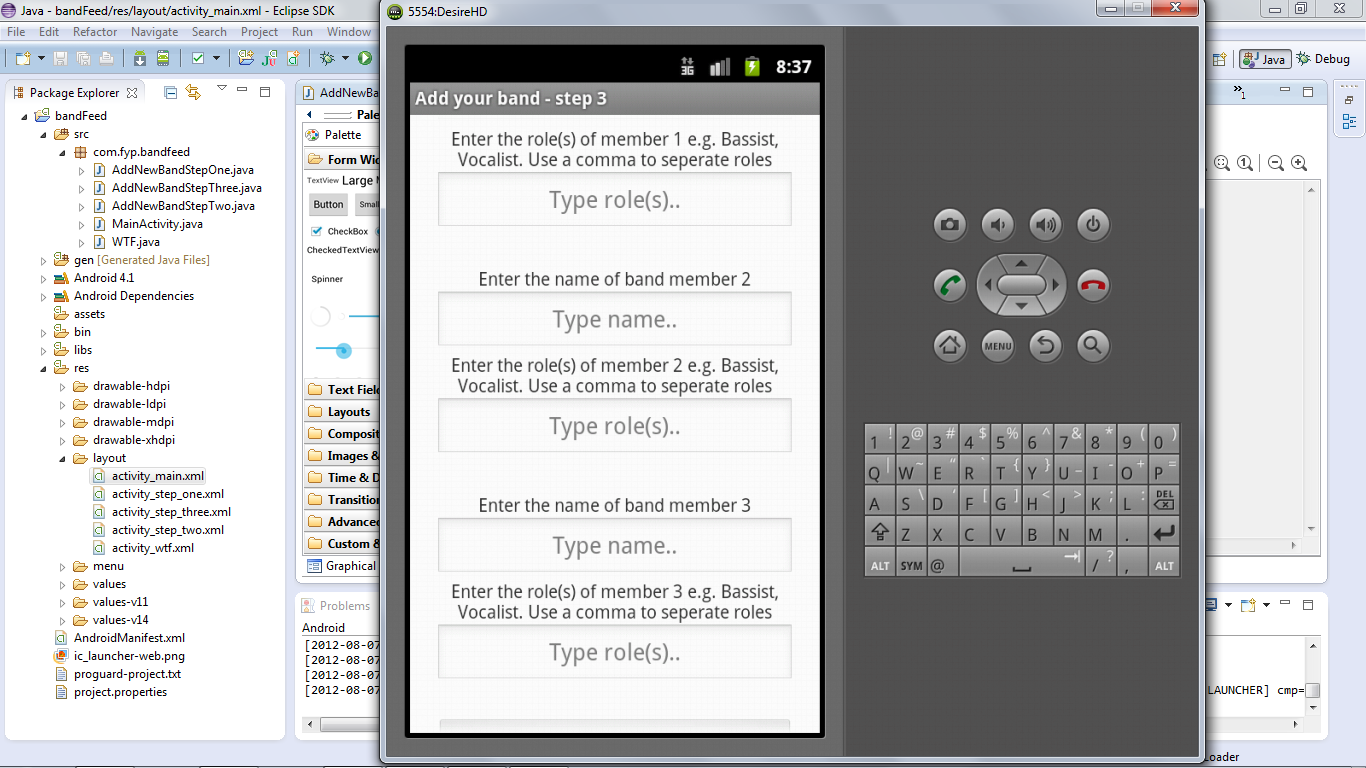
This new activity (activity\_step\_two.xml) asks for the amount of members in the band (using an editText for input). This activity leads on from activity\_step\_one.xml (as mentioned above). Like step one this activity includes a spinner linked to a java array using an adapter to display all the counties of the UK. This will be used for users to find bands in their area. Again, later into the project I may draw up the county data from an external source.

03/08/2012 – set up a Git repository. Continuation with activity step two of the setting up a new band profile process, adding an edit box for the user to provide their town that the band is based in.



05/08/2012 – ‘next’ button added to the bottom of step 2 (imagine the picture above with a button at the bottom just like step 1). Spent the rest of the day researching something I didn’t need to.. I tried looking for a way to add variables to XML but found out you can’t the hard way as these files are static. Consequently I discovered a tutorial on creating a dynamic layout in java which allows me to create / change activities on-the-fly. This is useful if the next activity depends on the user to input something.

07/08/2012 – Put the tutorial to use (mentioned in the previous journal entry). Step 2 of the band profile set-up process requires the user to input the amount of band member which is then used to create the Step 3 activity which requests the user to input the names of members in the band and their role(s) e.g. are they the guitarist or vocalist. The ‘next’ button in Step 2 uses the Intent method putExtra() which passes the amountOfMembers to Step 3 where the needed amount of editText’s can be created to enter the band member’s details.  
This is the first layout that uses scrollView. This allows the user to scroll down the page with their finger should they have many members in the band.

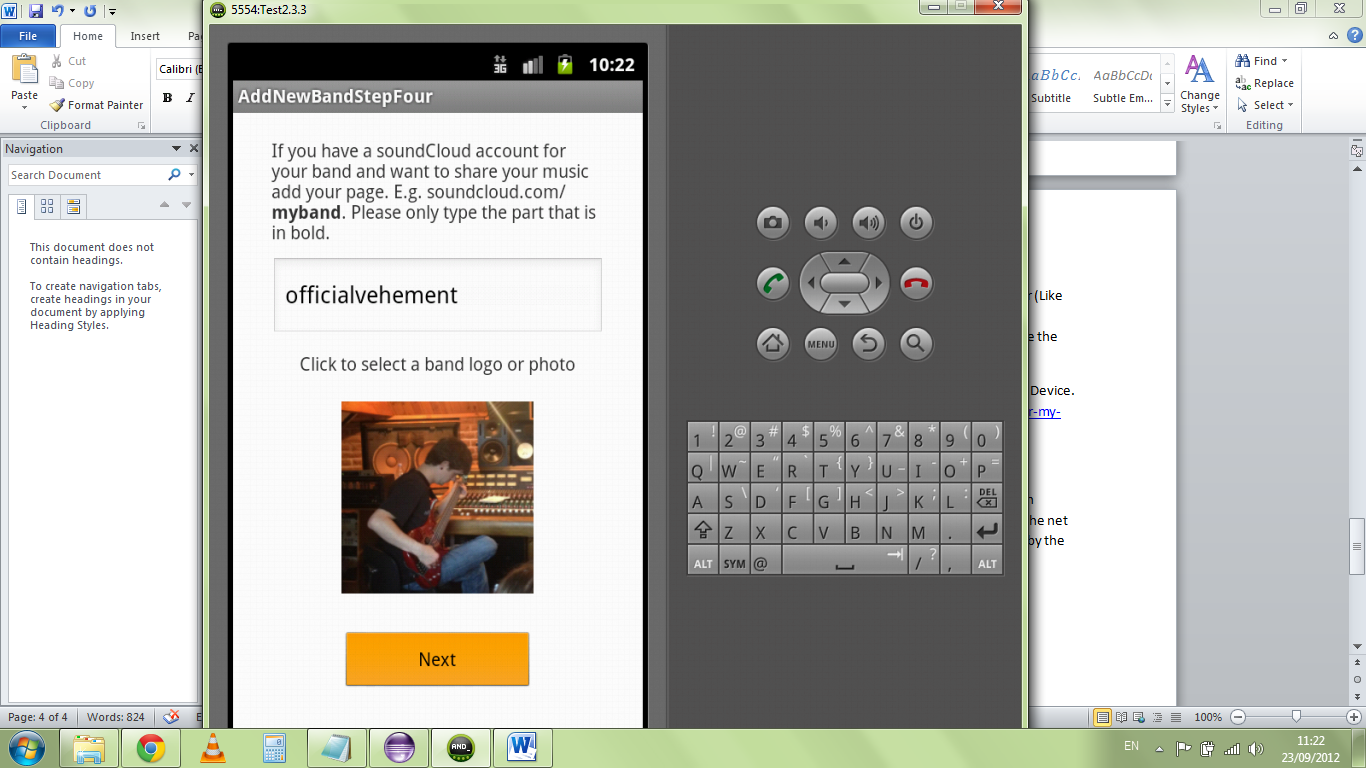


17/08/2012 – Start to think about changing the way I go from one activity to another during the setting up of band profile process. I’ve currently been carrying across important data held in variables to each activity (un-bundling the extras) regardless of whether the next activity needs it. The reason behind this is so that the very last step in this process will then write all these variables to file. I’ve decided to stop carrying over these variables and instead write them to file straight away as the steps are carried out. I have spent time researching and have found this page: <http://www.anddev.org/working_with_files-t115.html>

While researching I have discovered that you can not use the standard Java filewriter because.. “Each \*.apk File that is installed on the Emulator/Device gets its own User-ID from the Linux System. This ID is the key to the sandbox of the application. This 'sandbox' protects the application (and its files) from other bad apps, that i.e. want to manipulate the files we created in a bad manner (Like writing into them: "Whos reads this is... dumb ! Hhahaha").” Taken from <http://www.anddev.org/working_with_files-t115.html> But writing to an SD Card can be done the usual java way!

I’ve also done to some research into how to select an image from the gallery on the Android Device. <http://stackoverflow.com/questions/2507898/how-to-pick-a-image-from-gallery-sd-card-for-my-app-in-android>

23/09/2012 – Progress has been slow as I’ve found myself having to do a lot of reading which involved buying a another book due to the last not being detailed enough and examples on the net not being very intuitive. I have finally got step4 of the band profile process complete where by the user now inputs a biography, their url to SoundCloud and select a picture.



Once the user has completed the final step of the band process, the ‘Next’ button is clicked and the program creates a new folder under the name of the band and saves the image selected and creates a file to hold the data the user has inputted. The files in this folder will now be used by the band profile to display the appropriate data.

The reason for creating a new folder per profile was that the user may be several bands and each band profile would at least consist of a data file and an image file with the possibility of the amount of files increasing as the project evolves. I felt this kept things cleaner and with the possibility of many users creating band profiles the server would becoming quite cluttered without each band having their designated folder.

Trying to get the program to write this files correct was a real pain and with little and unintuitive examples the task took a long time.

25/09/2012 – Changed Main Activity to a dynamic layout to cater for the possible band profile that could have been created previously (the program will dynamically search for existing folder and then create buttons accordingly). This meant creating id’s for elements such as the profile buttons (amount depending on how many band profile has been created so far), the ‘Create a band profile’ and ‘about’ buttons. The id’s along with a string value (name of the button) are kept in a SparseArray (was suggested by the compiler that this would be a more efficient approach than using as HashMap. So that the appropriate profile can be open when clicking a button etc. because I don’t know the name of the users band(s) I can’t just simply use if (id == 6) then open the Bandit’s profile. The global ‘onClick()’ method requires an id number as an argument and I won’t know these id numbers that are applied to specific band profile. (Hope this make sense)!

07/10/2012 – Spent the last week research and experimenting with RabbitMQ. Had really problems trying to get the RabbitMQ client libraries to run through Command Prompt but got there in the end. Need to remember to include the library’s file locations in the Class Path, libraries also inside the current java package and use the following commands:

javac -cp rabbitmq-client.jar Send.java

java -cp .;rabbitmq-client.jar Send

Also run into problems with trying to include the management plugin when running the RabbitMQ server. Got this working in the end also!!

I learnt that RabbitMQ is really great so masses of messages to be sent masses of consumers. I learnt that when a message is sent out in a Fan exchange (or any other type of exchange to be exact (if the same message is being sent to many)) that there is in fact only one message saved to disk and it’s simply references to this message in all the Queues to all the consumers, this saves a hell of a lot of space. I also learnt that queues that haven’t been used within 10 seconds go into hibernation mode where the amount of RAM currently being used is dramatically reduced. Queues can remain open for as long as you like i.e. years if need be but also have choice of killing queues should the consumer never connect to the save within a certain amount of days etc.

I learnt about the different types of routing that RabbitMQ can do e.g. topic routing. These url’s became very useful:

Help setting up RabbitMQ with the management plugin  
<http://lostechies.com/derekgreer/2012/03/05/rabbitmq-for-windows-introduction/>  
Tutorials  
<http://www.rabbitmq.com/getstarted.html>  
Routing Topologies for performance  
<http://blog.springsource.org/2011/04/01/routing-topologies-for-performance-and-scalability-with-rabbitmq/>

08/10/2012 – Had meeting with Martin. I had doubts whether using a MOM would be suitable for my project and he said he had no doubts and said it would be fine. We discussed User Authentication / Password encryption too, where he advised to looking to BCrypt. Martin emailed me the following urls:  
<http://codahale.com/how-to-safely-store-a-password/>  
<http://en.wikipedia.org/wiki/SHA-2>  
<http://en.wikipedia.org/wiki/Cryptographic_hash_function>

Also sent off my project proposal review (whatever it’s called) today.

10/10/2012 – Creating two new logic drives on my home desktop, one to run RabbitMQ Server and one to run a MySQL Database. Using MySQL because it is what I learn’t in year two. I found the following tutorial to help connect to my Android application:  
<http://www.androidhive.info/2012/05/how-to-connect-android-with-php-mysql/>  
//Haven’t used this yet

sql!2M

Great website explaining PHP, MySQL, Apache etc.  
<http://www.webdevclips.com>

Spent the whole day trying to get the server’s ports forwarded to find that for some reason they’re not displaying on my own network yet everyone outside the network can access the servers. STRANGE!!

you might just want to try, as a test, reserving (explicitly mapping mac address to ip address) an ip address for the server in your router. There should be a dhcp section in your router where you can do this.

15/10/2012 – Tried the network again including explicitly mapping the mac address to the ip address of the machine running the servers and using the dhcp section in the router but still no luck. Now I’m just having to make sure I’m viewing the servers as localhost when working on my network and using my smartphone connected to 3G to check the changes are actually being made.

Today I’m working on connecting to a MySQL database where I will be adding band profiles to.

Created a band profile table with the following code:

CREATE TABLE bprofile (

band\_name VARCHAR(50) PRIMARY KEY,

genre1 VARCHAR(50) NOT NULL,

genre2 VARCHAR(50) NOT NULL,

genre3 VARCHAR(50) NOT NULL,

county VARCHAR(50) NOT NULL,

town VARCHAR(50) NOT NULL,

members INT(11) NOT NULL,

soundc\_link VARCHAR(50) NOT NULL,

pic\_link VARCHAR(50)NOT NULL,

created\_at TIMESTAMP default NOW(),

updated\_at TIMESTAMP

);

Created PHP scripts to be used to manipulate the MySQL device.

Run into problems with HTTPResponse hanging on emulator and phone even though <http://192.168.0.3:3401/bandFeed/api/create_profile_local.php> is accessing the php file. Need to try a simpler example.

17/10/2012 – It would seem the reason behind the networking problems I have i.e. I can’t access the servers from within my LAN but in WAN can access would be to do with the fact that my Router doesn’t support NAT LoopBack!

Got database to work with WAMP server on the same laptop as the emulator being run using the ip address 10.0.2.2 . I have no idea why I can’t connect to the database when WAMP is running on my other machine (the machine to be the server machine) using the ip address 192.168.0.3:3401 . Maybe it’s a port issue but I can access the database on the server machine via my laptop which is weird. I will have to carry out some more testing to see if I can nail it down.

19/10/2012 – Finally got the Threading working in Android 4.0. Originally the app worked in 2.3 but when trying to run it in 4.0 it just crashed. I sorted this by using ASyncTask. Considering renting a Virtual server and space due to the problems I’ve had with my router. I’m about to move house and it usually takes a while for the Internet Provider to set up the new line. Paying for a virtual server will allow me to continue you my work at the University.

So yeah got band profiles being sent to my Database which currently running on the same laptop. I’ve just started working on making search queries to the database to find band profiles and then the messaging will commence.

29/10/2012 – Virtual Server confirmation through. Currently setting server up. It’s a linux Ubuntu 12.04 LTS server. Using Putty and WinSCP to perform SSH commands. Had to install additional packages into the server such as Apache, MySQL and php.

<http://www.sussex.ac.uk/Users/mfb21/osnet/ex/1/lab1.html>

<http://www.bsd.org/unixcmds.html>

<https://help.ubuntu.com/community/ApacheMySQLPHP>

30/10/2012 – Had trouble connecting to mysql database as I was using the IP address of the server with the port of the database. While investigating to see whether it could have been due to the server’s firewall it clicked in my head that the database port doesn’t actually need to be open to external clients/interfaces. Because I have already made a request to a php document successfully the php document can communicate with the database via ‘localhost’ and there is no need to try and access through the IP address with the database port.

I now have the database accessible from my phone. At the moment I’m using the ‘root’ user with it’s password. User accounts will set up in later prototypes where users will have restricted privileges etc. But for now using the ‘root’ is fine.