

Develop a Client-Server Based food journaling application					
Milestone	Tasks	Estimated Time	Resources	Notes	Tips
Set up development platform	Set up Server platform (LAMP) on your PC	1-2 days	One Useful Tutorial: https://www.digitalocean.com/community/tutorials/how-to-install-linux-apache-mysql-php-lamp-stack-on-ubuntu-14-04	- LAMP (Linux+Apache+Mysql+PHP) is a traditional and effective platform for server. - Set up LAMP on your PC is a good habit for writing server script. In practice, you can write and debug on your own PC and then upload the stable version to the server-side.	
	Set up Server platform (LAMP) on Amazon EC2	1-2 days (if you are familiar with Amazon service, it's just a register-and-click issue)	Amazon Web Service: http://aws.amazon.com/	- Amazon EC2 has 1-year free trail plan, which is enough to be used as the Server for this software	Don't forget to open port:80 (which is used for the HTTP Service) of your Amazon EC2 instance.
	Set up Android Development platform on your PC	less than 1 day	Based on your OS version (Mac, linux, windows etc.) there are many tutorials on how to set up the android development platform. - Google it and you will get the answer	- It's not necessarily android, you can also go with ios, but for the reference implementation, we will stick with android platform	Download appropriate SDK version (higher than 4.1 is recommended)
	Set up Git on your PC and create corresponding Github repository	less than 1 day	A "cheat sheet" for git: https://training.github.com/kit/downloads/github-git-cheat-sheet.pdf Video that explain the basic of Git and Github: https://www.youtube.com/watch?v=U8GBXvdmHT4	- Using Github to track your code is very helpful when reviewing and versioning.	Create separate folders for client and server
Set up basic Service on Amazon EC2	Design and create your database, tables and their structures	1 day	Nop (Tutorial regarding database user-management and table design)	- Set your root user and its password - Create a database and associate it with a user that can operate on it - Design the table structures in the database (One table for user management and another for the photo's metaData)	Assign appropriate authority to the user: select, insert, delete, update
	Install phpmyadmin on the server (optional)	less than 1 day	phpmyadmin: http://www.phpmyadmin.net/home_page/index.php	- Using phpmyadmin will make it easier for you to manage your database from the browser (web interface). But this is optional, since you can definitely use the terminal to make direct control.	
	Write server script to operate on the database (insert/retrieve/validate user info, insert/retrieve photo metaData etc.)	1-2 days	w3school (online tutorial and reference documents): http://www.w3schools.com/		Writing these operations in separate functions for easy management.
	Write Server script to handle the "form" sent from mobile/client device (The form could include the query for log-in, register, upload photo, download photo and download meal metaData)	2-3 days	Incorporate different formats of data via POST method: http://stackoverflow.com/questions/3508338/what-is-the-boundary-in-multipart-form-data w3school (online tutorial and reference documents): http://www.w3schools.com/	- Usually, username/password and Image/metadata can be sent in one POST packet in HTTP Protocol, in this sense, you can access these information via global variable <code>\$_POST[]</code> in php and process (store in database or locally) afterwards.	Prepare an exclusive folder to store all the photos/images sent from client (As images can not be stored in the database, it's commonly store the path in which the file is located.)
Set up basic service on mobile/client device	Design and implement Log-in/Register Service on Android Device	2-3 days	Log-in/Register UI Design 1: http://www.color-hex.com/user/add-palette.php Log-in/Register UI Design 2: http://www.androidhive.info/2011/10/android-login-and-registration-screen-design/	- Encapsulate username/password/lastname/firstname in a POST form and sent to the corresponding Server script.	make sure to fully use the async framework in Android and let all network operations run in a separate background thread.

			Connect Android Device to internet: http://developer.android.com/training/basics/network-ops/connecting.html		
	Use Camera to take photo, store it and upload	2-3 days	Using Camera on Android Platform: http://www.androidhive.info/2013/09/android-working-with-camera-api/ Official Camera Document: http://developer.android.com/guide/topics/media/camera.html Taking photos simply: http://developer.android.com/training/camera/photobasics.html#TaskScalePhoto	- Upload image data/description/time via POST form package	Use Android Concurrency Framework (such as AsyncTask) to perform network operations and compress the images before uploading
	Download metadata list and images asynchronously, present them in ListView	2-3 days	Loading Large Bitmaps Efficiently: http://developer.android.com/training/displaying-bitmaps/load-bitmap.html Processing Bitmaps Off the UI Thread: http://developer.android.com/training/displaying-bitmaps/process-bitmap.html Caching Images: http://developer.android.com/training/displaying-bitmaps/cache-bitmap.html Custom Adapter for ListView: https://code.google.com/p/android-imagedownloader/source/browse/trunk/src/com/example/android/imagedownloader/	-Download Metadata via JSON and then parse it locally, also, only load the thumbnailing image into the memory to speed up the whole process.	Using Cache locally to provide better user experience
Implement additional features on web	Polish web UI	1-2 days	Free CSS Template: http://www.free-css.com/	- Writing good CSS or reference to the open-source css files on line	
	Email confirmation while changing password	1-2 days	Config smtp at Ubuntu: http://askubuntu.com/questions/47609/how-to-have-my-php-send-mail	- Using smtp+php to send customized email	
	Implement image cropping/manipulation service on Website	2-3 days	8 open-source image cropping script: http://www.hotscripts.com/blog/javascript-image-cropping-scripts/	- Fully use of the image-cropping script so as to speed up your software development	
	Incorporate 3rd party data/API	2-3 days	Lots of options, such as FatSecret, Yummly etc.	- Read the documentation of different 3rd party API, then put it in your web service.	
	API for Data export in zip File	1-2 days	Create Zip via php: http://davidwalsh.name/create-zip-php	- First stored the zip file locally and then provide link for downloading.	