



Hungry Bulb Internship Selection Assignment. Technical.

Deadline – May 20, 2016. 10am.

Submit to – internship@hungrybulb.com (in PDF)

This assignment has three categories – web dev, android/iOS dev, arduino dev.

Though all the sections are inter-connected when it will come to practical implementation, still you are supposed to solve for the section you have applied for and you think is your strength.

While submitting do mention clearly your full name and the profile you have applied for.

To get a better understanding of the background about our startup, revisit the internship application form. Also you can visit the website www.hungrybulb.com. The website is under testing and construction. So you might face slow responses or inaccessibility at some points. Be patient and re-visit after a while.

Problems, category wise –

Web dev (MySQL, HTML, CSS, Javascript, PHP)

For our browser control, let's say we have to make a secure portal for a secure access to home system control. For that we have to design a system that works just like *web.whatsapp.com* for login. Your task is build that system exactly like it. You need to develop the web page, the qr-code entry point, session management, real-time authentication and redirect to user's personal view. Basically an exact copy (working wise) of the *web.whatsapp.com* login page. The pages will need to be responsive, beautiful and error-less.

Your task is to write a flow chart of algorithm, or pseudo code, on how exactly you'll go about designing this module. No need to write full length codes. Only the algorithm is required. Do try to cover all conditions that a user may run into while using the portal.

Android/iOS development

There are two situations for you.

1. We need to have *web.whatsapp.com* like login portal for browser interface of our smart home systems. For that an app module is required obviously to scan the qr code and authenticate the login.
Design a flow chart of the algorithm that will be required to perform the task, end to end.
2. Let's say you need to scan all the Bluetooth devices all around you, at least once every second. You need to list every detail about those devices possible, but mainly name, MAC

address and signal strength which can be used to predict their distances from phone. Design an algo flow chart to outline how you would go about designing this module.

Arduino Development

Your task is to make Bluetooth beacons that are cheap, battery efficient (at least a month of runtime) and have good signal strength. In case you are not sure what beacons are, you can start reading here - <http://treelineinteractive.com/blog/growing-value-beacons-internet-things>. There are more links within the article. Make sure to study as much as you can about them. Google and Apple too have their beacons in production. Understand their purpose well.

Your task is to make a project plan on how you will go about making this device. Try to cover as many details as possible. Also list what kind of components you will require make the device.

Note – try to keep creativity and practicality in balance.

All the entries should come in before the mentioned deadline. Late entries will be disqualified from the selection process.