Q-bot Executive Summary

**Problem:**

Patients have to wait a long time in busy hospital. Doctors and hospital managers know about the problem but think it’s something that’s bound to happen with high demand among patients and comparatively fewer number of doctors.

Solution:

The patients book their slot in a virtual queue by calling the hospital’s Q-bot number. The patient is instructed that he will be called when it’s his turn and should report to the hospital when he is called. The patient can relax peacefully until it’s his time to go.

There is also an option to be redirected to the hospital’s reception staff.

The patient can also check the how long it will approximately take to receive the call back from the hospital. So, for more sophisticated, or regular patients an app can check availability and book a slot automatically on behalf of the patients, so that the appointment is at a desirable time for the patient.

Problems:

**Optimizing the time to call the next patient in the queue**

When the patient calls he is added to the Common Q.

From the Common Q, people are transferred to the Reception Q when they report at the reception.

The number of people in the Reception Q must be kept at a number such that the doctor never has to wait for the patient. (This number can be calculated dynamically by machine learning algorithms too).

The patients in the Common Q are called or sent an SMS so that they report to the Reception, so as to maintain the number of people.

Solution 1: Manually assign values:

1. Every **x** minutes the Common Q and Reception Q is checked.
2. If the number of people in the Reception Q is less than **y**, start calling the people in the Common Q
3. From the Common Q call **z** more uncalled people.

Soultion 2: Machine Learning:

**Measurements**

Patient Reporting time: The time between the call/SMS to the time the patient reports to the reception.

Patient waiting time: The time between the patient reporting to the hospital reception and time he/she gets server the first time.

Patient time in hospital: The time between the patient reporting to the hospital and the time he/she exits the system.

Advantages:

1. Uses Phone as primary interface. No additional software setup for the patient who unsuspectingly calls the hospital’s number
2. No installation for the doctor or the hospital since it’s a web application.
3. No complicated appointment system to follow for the doctor
4. Accommodates walk in patients and appointment patients equally well

Competitors:

1. Skiplino