

TaskFull Stack Developer : Demo Project

Objectives

This task should take about 4-6 hours to complete.

We're looking for clear coding style and a demonstration of design principles such as OO, Functional, Generic and other structured approaches to implementation.

We're also looking at how you use the available tools and ecosystem to minimise the effort required to deliver a high quality solution. Note that we're not expecting this to be production ready necessarily, but want so see that a transition to production is possible given code comments and other recommendations.

Please ask for clarification if any of the requirements are unclear.

Task

An application with the following:

1. Write a random number generator in python that publishes a random number between 1 and 100 to an MQTT topic in a message broker. Recommend to use the paho MQTT python client library. <http://www.eclipse.org/paho/clients/python/>
2. Stand up a simple MQTT message broker. Recommend mosquitto or RabbitMQ.
<https://mosquitto.org/>
<https://www.rabbitmq.com/>
3. A python client that reads the random number from the broker and prints it out with a microsecond accurate timestamp. Again, recommend the Paho MQTT client library.
4. A web application (javascript) that reads the random number and animates the height of an SVG box based upon the random number. Recommend the Paho javascript client library for browser MQTT connection. For animation, you could use jQuery or velocityjs, or any other library you're comfortable with.
<https://eclipse.org/paho/clients/js/>
<http://velocityjs.org>

Nice To Have

1. Environment to be configured with Ansible, including infrastructure and application deployment.

2. Use docker to deploy the message broker.
3. Entire system to be configured in github or bitbucket.
4. Application running on AWS Free Tier server. Please provide access to attached public key and advise Public IP of VM on which the application is deployed.

ssh-rsa

AAAAB3NzaC1yc2EAAAADAQABAAQDgdfqSpIEPMAz1RC3pyv+JRyZNLqDOkCkLhZ
KGZfrdYSrbMK+JNvhX3O+n7s4kKPLb1pS/SnStv4M+wjH27C0zZSoRjm6rOUqyRNd/
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68XV0RgnAoiDct3JWEkcc+E4gIsurkniQHcNb5e6tl
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