Software Engineer Coding Exercise

The exercise

Overview

In this exercise, you will implement an infrastructure for a command line application that will detect and notify suspicious behavior in an integrated GitHub organization. You will also implement a few features over the infrastructure you created

in order to do so, your application will integrate with GitHub using webhook and implement a simple “anomaly detection“ mechanism that will notify the user on suspicious behavior.
Once such behavior is detected, the event details should be printed to the user by the console app.

Note that your infrastructure should support more developers working on the project and adding capabilities in the future

Suspicious behaviors

1. pushing code between 14:00-16:00
2. create a team with the prefix “hacker”
3. creating a repository and deleting it in less than 10 minutes

Evaluation

You will be evaluated on the following:

1. Coding standards - readable code, conventions, reasonable efficiency etc.
2. Design - We want a good object-oriented design that makes it easy to expand the application with malicious behaviors, notification methods, etc.
   a. while the system in the exercise is small - it should be designed as a big system that many developers/analysts will contribute code to
3. Completeness - the application should work as described

Technical guidelines

1. Create (free) github organization to experiment with with any name that you like.
2. Register webhook to the organization, **this can be done manually**
3. We recommend to set up a solution that will allow you to receive webhooks locally in order to experiment and validate your solution as you implement it. (see next section)
4. Implement an application as described in previous sections:
   a. it should receive and handle incoming webhook events
   b. detect suspicious behavior
   c. notify the user using the console (or any way you find easy)
5. You can choose any programming language that you want. We recommend that you chose the language you feel most comfortable with.

Working with webhooks locally

When setting up a webhook you should supply some static address for the event to be sent to, usually this is not possible when working on a personal computer. There are many tools that allow you to do so by setting some endpoint that will receive the events and tunnel it to your computer and the local port you want to listen on, some examples: smee.io | Webhook payload delivery service , ngrok | Unified Application Delivery Platform for Developers and more.

What to submit

Please send us back your solution with a README file describing how to build and run your application.

It can be sent as zip via mail or as link to the repository you created as part of this exercise.

We hope you will enjoy this exercise and wish you good luck. 🙂