

Backend Assignment

Problem Statement

Write a standalone Python script that integrates with Gmail API and performs some rule based operations on emails.

Task Details & Breakdown

1. This project is meant to be a standalone Python script, not a web server project.
Use any 3rd party libraries you need for the assignment
2. Authenticate to Google's Gmail API using OAuth (use Google's official Python client) and fetch a list of emails from your Inbox. Do **NOT** use IMAP.
3. Come up with a database table representation and store these emails there. Use any relational database for this (Postgres / MySQL / SQLite3).
4. Now that you can fetch emails, write another script that can process emails (in Python code, not using Gmail's Search) based on some rules and take some actions on them **using the REST API**.
5. These rules can be stored in a JSON file. The file should have a list of rules.
Each rule has a set of conditions with an overall predicate and a set of actions.

Example: Taken from Apple Mail app.

Description: Rule 1

If all of the following conditions are met:

Fromcontains tenmiles.com

Subjectcontains Interview

Date receivedis less than 2 days old

Perform the following actions:

Move Message to mailbox: Inbox

Mark as Read

?

Cancel

OK

Requirements for Rules

Each rule has 3 properties

- Field name (From / To / Subject / Date Received / etc)
- Predicate (contains / not equals / less than)
- Value

A collection of Rules has one of 2 predicates - “All” or “Any”

- “All” indicates that all the given conditions must match in order to run the actions.
- “Any” indicates that at least one of the conditions must match in order to run the conditions.

Implement the following set: (Similar to the screenshot)

Fields: From, Subject, Message, Received Date/Time

Predicate

- For string type fields - Contains, Does not Contain, Equals, Does not equal
- For date type field (Received) - Less than / Greater than for days / months.

Actions

- Mark as read / mark as unread
- Move Message

You should be able to make the rule in the screenshot work as well as any other combination of the same set of fields / predicates.

What we look for

1. Whether all the functionality described in the requirements are met.
2. Readme file with the steps to install and run the app.
3. Test cases will be a great bonus. (we're looking for unit or integration tests)
4. Whether there are any obvious problems with the implementation.

How to share the assignment

Please share the assignment code on **GitHub** along with a video recording that includes a concise presentation on how you have implemented the task, coupled with a demonstration showcasing its functionality.

Good Luck !