Flask Hiring Test

Why this test?

We build applications for the web, so understanding how web applications work, is a pre-requisite for any new engineer. Flask is one of the simplest and well written Python based web application frameworks and can easily be learned in a few hours.

If you have never worked on web applications before, this test will also help you evaluate whether this is something you are skilled at or can easily learn doing.

Event Scheduling & Resource Allocation System

The goal is to build a small web application where organisations can schedule events (workshops, seminars, classes) and allocate shared resources (rooms, instructors, equipment).

The system should ensure resource conflicts do not occur, but candidates must design their own validation logic.

Database Tables (Minimum Requirements)

Candidates must design proper relationships.

1. **Event**
   - event_id
   - title
   - start_time
   - end_time
   - description

2. **Resource**

   ○ resource_id

   ○ resource_name

   ○ resource_type (room, instructor, equipment, etc.)

3. **EventResourceAllocation**

   ○ allocation_id

   ○ event_id

   ○ resource_id

Views

- Add/Edit/View Events

- Add/Edit/View Resources

- Allocate resources to events

- Conflict detection view

Logic Requirements

Conflict Detection

Whenever an event is created/edited, the system must verify that:

- No resource is double-booked

- Time overlaps are handled correctly

- Edge cases (start = end, nested intervals, partial overlaps) are addressed

Report - Resource Utilisation Report

Recommended Columns:

- Resource

- Total Hours Utilised (in a time range)

- Upcoming Bookings

User chooses a date range, and then the system computes metrics.

Use Cases to Implement

- Create 3–4 resources

- Create 3–4 events with overlapping time windows

- Allocate resources to events

- Show conflict errors correctly

- Display the utilisation report

How to Submit

Once this application is ready, push your code to GitHub and add a `README.md` file to your repository. Add screenshots and a screen-recorded video (mandatory) showing the screens and reports in your README.

After this, just drop in an email to the engineer who requested you for this test or at hr@aerele.in saying that your project is done with the subject - "Assignment Submission - Event Scheduling & Resource Allocation System"

Next Steps

After this, we will get in touch with you and you will have to walk us through your code. We will then ask for a few changes or additional features that will help us evaluate how

well you know your codebase.

Tips to Ace the Code Evaluation

- Build a good UI, with clean forms and reports
- Write concise SQL queries if not using an ORM
- Avoid code duplication, abstract out functions that can be reused

A word of caution: In the past, applicants have not done this test themselves and have completely failed to explain or make changes. We know it sounds dumb, but people do such things. So copying it from some other source will bring down your reputation. Please do not do it.

Feel free to ask for help from anyone or just look on the web. Do this project by yourself if you want to sustain a career in programming and technology!

All the best!

Links

- http://flask.pocoo.org/docs/1.0/
- https://dev.mysql.com/doc/mysql-getting-started/en/
- https://www.python.org/about/gettingstarted/
- https://www.codecademy.com/learn/learn-python