



Feedbacks page server - Essay

Our open position needs a person to maintain and evolve our product back-end, as well as keep good communication with pairs and the product team. We take care of the web product that is the main platform for our customers to manage and access their data.

This playground project aims to the day-to-day activities.

Context

Essay specification

Requirements

Data specification

How the essay will be evaluated?

Context

Incognia's customers can report feedback to an account or device to control specific cases. The feedback processing is asynchronous, so they don't know the final result right away. For example, how many accounts or devices were affected.

To give visibility over this, our product designer proposed an MVP page to list these feedback results.

You were assigned to understand the problem and propose a back-end implementation to serve the front-end.

Feedback							
ID	Dates	Feedback					
Processed time	Feedback time	Feedback	Affected devices	Estimated affected accounts	Reported by	Account ID	Encoded installation ID
2021-04-21 19:20:13	2021-04-21 19:20:13	Account takeover	20	200	N/A	a94a32c5-8310-411b	MWQ1YTBmMWEtYT...
2021-04-21 17:10:00	2021-04-21 17:10:00	Verified	2	20	N/A	6a68e729-0d09-49d7	ODQ2OTg2YTYtOGV...
2021-04-20 12:12:12	2021-04-20 12:12:12	Account takeover	3	30	Gus Fring	902f83dc-4329-4808	NmlyMWVjMzItZGYy...
2021-04-18 14:14:14	2021-04-18 14:14:14	Account takeover	5	50	Gus Fring	09671c13-b84a-4145	NjJlMmlzNjEtZjViNiO...
2021-04-16 15:15:15	2021-04-16 15:15:15	Account takeover	1	10	Gus Fring	c72461d8-6851-4780	MjUONzgXOTctOGR...
2021-04-15 16:16:16	2021-04-15 16:16:16	Verified	1	10	Jesse Pinkman	d2043b6f-00b4-4624	OGRmMWQ3ZjMlY2...
2021-04-15 16:16:16	2021-04-15 16:16:16	Account takeover	6	60	Jesse Pinkman	6a68e729-0d09-49d7	NDEzY2IzZjMlZDE5N...
2021-04-15 16:16:16	2021-04-15 16:16:16	Account takeover	113	1130	Walter White	e4866070-0d89-49c7	Y2YwMzQlMGU1OTJl...
2021-04-15 16:16:16	2021-04-15 16:16:16	Verified	2	20	N/A	964af4ba-8f6b-4b65	YzA5YTFlkNzMiZjhhN...
2021-04-15 16:16:16	2021-04-15 16:16:16	Account takeover	2	20	Gus Fring	e4866070-0d89-49c7	MWQ1YTBmMWEtYT...
2021-04-15 16:16:16	2021-04-15 16:16:16	Verified	1	10	Walter White	4973a654-c7fd-453a	ODQ2OTg2YTYtOGV...

Essay specification

Write a document in English describing the high-level solution, the back-end classes and layers, and the database schema and queries.

- Remember to justify your choices;
- Suggest the server protocol and database that you judge is most suitable;
- Feel free to use images if you deem it necessary;
- For simplification, doesn't consider authentication;

Requirements

In this section, we provide the expected behavior for the page and server.

- The front-end should be able to list, filter and paginate feedback;
- All requests should receive an `organization_id` to identify the customer organization;
- All filters can be combined: ID, Dates, or Feedback;

- The ID filter can receive multiples values of "Account ID" or "Encoded Installation ID";
- The Dates filter looks for "Processed Time" or "Feedback Time";
- The Feedback filter can receive multiple values of "Feedback";

Data specification

Another team will be responsible for writing the feedback results into the database that you will propose. Consider that the data will be available for querying and that it's expected to handle about 10M insertions daily and about 500 accesses daily.

There's an example of the data that they have available:

```
// Feedback
{
  id: 7,
  organization_id: 4,
  reported_by_user_id: '2ead2e59-b753-4f2f-b83a-dc29a0f15911'
  account_id: 'db00bd7f-101f-4a75-85dd-43b4bf55ff33',
  installation_id: '4e017ca6-a10e-4dda-bbf4-a841c59b4060',
  encoded_installation_id: 'NGUwMTdjYTYtYTEwZS00ZGRhLWJiZjQtYTg0MV',
  feedback_type: 'verified',
  feedback_time: '2023-08-14 12:10:00'
}

// Feedback Result
{
  feedback_id: 7,
  affected_devices: 10,
  estimated_affected_accounts: 5
  processed_time: '2023-08-14 12:12:00'
}

// User
{
  id: '2ead2e59-b753-4f2f-b83a-dc29a0f15911',
  name: 'Mike Ehrmantraut',
```

```
email: 'mike@lospolloshermanos.com'
}
```

- The `feedback_type` attribute can be one of these: `verified` , `reset` , `account_takeover` , or `identity_fraud` ;
- The `encoded_installation_id` attribute is a Base64 of `<INSTALLATION_ID>:<APP_ID>`

```
$ ENCODED_INSTALLATION_ID='NGUwMTdjYTYtYTEwZS00ZGRhLWJiZjC  
$ echo -n $ENCODED_INSTALLATION_ID | base64 --decode  
4e017ca6-a10e-4dda-bbf4-a841c59b4060:93dedd47-0728-48ad-ac85-c
```

```
$ echo -n 'some-installation-id:some-app-id' | base64  
c29tZS1pbmN0YWxsYXRpb24taWQ6c29tZS1hcHAtaWQ=
```

How the essay will be evaluated?

- Was the document clear and well-written?
- Were the choices well-founded?
- Does the solution solve the problem?