

Approval application design

Problem statement:

You are tasked with building a approvals application for a large organisation. This organisation needs to be able create and execute approval processes.

What is an approval process?

Example 1: Approval alpha:

Alice and Bob has to approve, once they approve, we go to the next step where Charles has to approve. If Charles approves then the approval process is a success.

Example 2: Approval Beta:

Arnold has to approve, once they approve we have to go to the next step where Cynthia has to approve. If Cynthia approves then the entire approval process is successful.

Example 3: Approval Gamma:

Alan and Ben have to approve, once they approve we go to the next step where Approval Alpha has to successfully approve, which means we need to successfully execute the steps of Approval Alpha.

1. Each step of an approval process can have multiple approvers
2. In examples 1 and 3, we see 2 approvers in the first step of each example. Each step can have an associated field minimumApprovers
3. In examples 1 and 3 if minimumApprover=1 then as long as either 1 of the 2 approvers in step 1 approve, the approval process moves to the next step.

User actions:

- Create an approval process
- Construct an approval process by selecting users (approvers) or other other approval processes for each step
- Configure step settings (set minimumApprovers)
- View a created approval process
- Display each step, approvers in each step, minimumApprovers for each step
- Execute an approval process
- A user should be able to come to the view page for an approval process and click on execute
- This creates an execution instance for the approval process with an execution id
- View an approval process execution
- Users that are a part of this approval process can view the approval process execution, if they are required in the current step then there is a CTA available for the user to either approve or reject
- The execution page should display the current step, history of approval / rejections in previous steps, current approval process status (success/in progress/failure)

- Dashboard
- The user's entry point to the application is a dashboard that allows the users to view list of approval processes, list(history) of approval process executions, CTA to create an approval process
- Login
- A user must be able to login with a username and password

requirements:

Backend:

1. Populate a users database with the following user details

User name	Password
Alice	1234
Bob	1234
Charles	1234
Arnold	1234
Bill	1234
Cynthia	1234
Alan	1234
Ben	1234

2. Create backend in Django

Frontend:

1. Create a basic functioning front end that leverages **Material UI** for implementing the user interface of the application. You may use React or Next for implementing the front end.
2. Create frontend in ReactJs.