// University Activity Approval System - Optimized Schema with Dynamic Workflow

Table users {

user\_id integer [pk, increment]

user\_email varchar [not null, unique]

user\_password varchar [not null]

full\_name varchar [not null]

user\_phone varchar

role\_id integer [not null, ref: > roles.role\_id]

college\_id integer [not null, ref: > colleges.college\_id]

note: 'college\_id is always required. University-level staff are assigned college\_id = 1.'

Indexes {

user\_email [unique]

}

}

Table roles {

role\_id integer [pk, increment]

role\_name varchar [not null]

note: 'Roles: Student, Staff, SupervisingProfessor, CollegeDean, CollegeViceDean, StudentUnion (View Only), StudentUnionHead, StudentEntitiesDirector, ViceDeanStudentAffairs, DeanStudentAffairs'

}

Table colleges {

college\_id integer [pk, increment]

college\_name varchar [not null, unique]

note: 'Use college\_id = 1 for university-level staff'

}

Table statuses {

status\_id integer [pk, increment]

status\_name varchar [not null, unique]

note: 'Status values: pending, approved, rejected'

}

Table activity\_types {

type\_id integer [pk, increment]

type\_name varchar [not null, unique]

note: 'Supported types: Initiative, Lecture, Training, Workshop, Exhibition, Competition'

}

Table locations {

location\_id integer [pk, increment]

college\_id integer [not null, ref: > colleges.college\_id]

location\_name varchar [not null]

Indexes {

college\_id

}

}

Table activities {

request\_id integer [pk, increment]

requester\_id integer [not null, ref: > users.user\_id]

type\_id integer [not null, ref: > activity\_types.type\_id]

supervisor\_id integer [ref: > users.user\_id]

location\_id integer [not null, ref: > locations.location\_id]

description text [not null]

objectives text

start\_time timestamp [not null]

end\_time timestamp [not null]

created\_at timestamp [default: `now()`]

note: 'If the requester is a student and the activity is college-level, they must select a supervising professor from the same college. Workflow starts from this professor.'

Indexes {

requester\_id

}

}

Table workflow {

workflow\_id integer [pk, increment]

assignee\_id integer [not null, ref: > users.user\_id]

request\_id integer [not null, ref: > activities.request\_id]

status\_id integer [not null, ref: > statuses.status\_id]

action\_date timestamp

comment text

note: 'Tracks the approval sequence. Only show to next assignee when the previous one approves. Types: student\_college, student\_university, staff\_college.'

Indexes {

(request\_id) [unique]

}

}