$R_{users} = \{ uid, uname, upassword, upicurl, ucash \}$

BCNF ✓

$\Sigma_{users} = \{\{ uid \} \to \{ uname, upassword, upicurl, ucash \}\}$

$R_{projects} = \{ pid, ptarget, pstartdate, pduration, pdesc, keywords, status, ppicurl, uid \}$

BCNF ✓

$\Sigma_{projects} = \{\{ pid \} \to \{ ptarget, pstartdate, pduration, pdesc, keywords, status, ppicurl, uid \}\}$

$R_{donations} = \{ users, dtime, damt, pid \}$

BCNF ✓

$\Sigma_{donations} = \{ \{ user, dtime, pid \} \to \{ damt \}\}$

uid is the username for the users, eg. Danniel1997 (unique)
uname is the name of the user, eg. Danniel Tan

upicurl, ppicurl are urls that leads to a picture, this allows users to "upload" their profile pic

status is used to keep track of the status of the project, it takes in two value: {ongoing, funded}
  ongoing:
        all the donations in the projects are not transferred to the project owner yet
        user can still donate if the project is not due yet
        user cannot donate if project is overdue even if it is ongoing (bug lol)
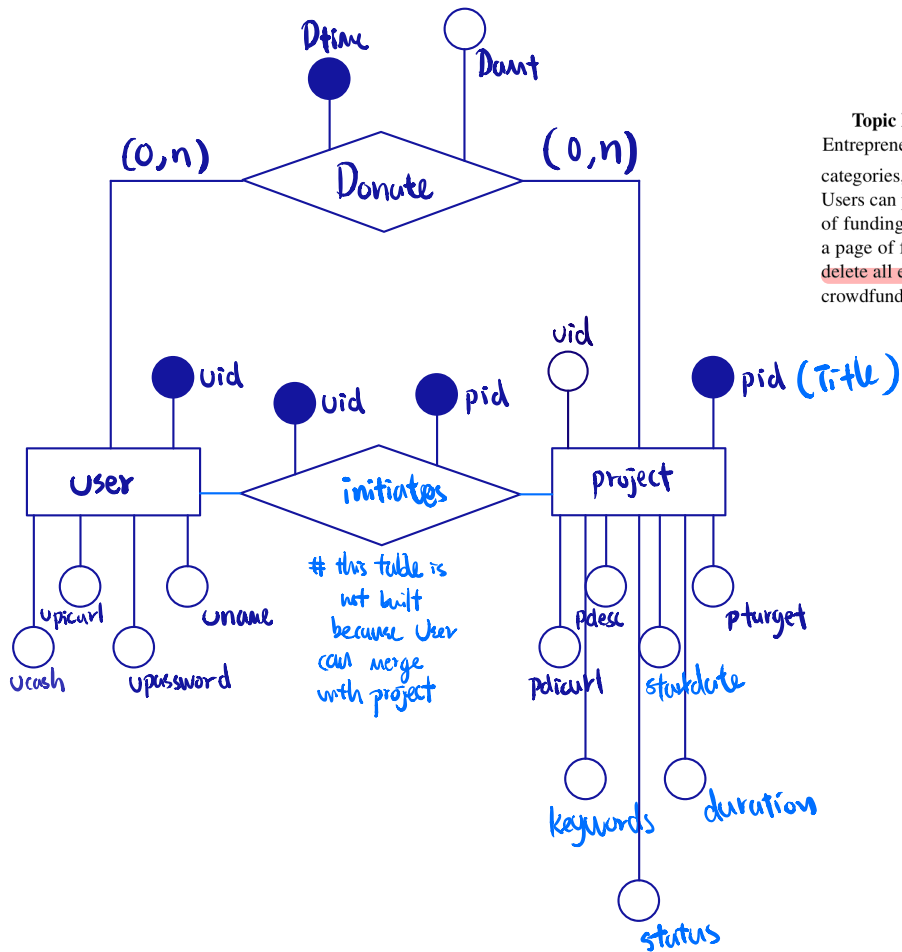 **funded:**
        once the target is met or project is due, the owner must manually click confirm on
        the ongoing project to turn its status to funded, then all the money in the project
        will go to the owner's account

The status attribute is used so that:
When a project is deleted, the money can be refunded back to the donors if it is still ongoing
When a user is deleted, all his donation can be refunded, and all his ongoing projects can be refunded
to their donors as well, so all money is accounted for

Design 2:

ER Diagram

Dtime • Damt ○

(0,n) ⬦ Donate (0,n)

● uid ● uid ● pid ● pid (Title)

User —— ⬦ initiates —— project

uid ○

this table is not built because User can merge with project

User attributes:
- upicurl ○
- uname ○
- ucash ○
- upassword ○

Project attributes:
- pdesc ○
- ptarget ○
- pdicurl ○
- startdate ○
- keywords ○
- duration ○
- status ○

Topic B, Crowdfunding. The system is a catalogue of projects looking for crowdfunding. Entrepreneurs can advertise their projects (title, description, start date, duration, keywords or categories, the amount of funding sought). Users can browse the projects and fund projects. Users can play both roles of entrepreneurs and investors. The system tracks the current amount of funding raised, brings the project to the status of "funded" and advertises this success on a page of funded projects. Each user has an account. Administrators can create, modify and delete all entries. Please refer to www.globalgiving.org, www.fundanything.com or other crowdfunding sites for examples and data.

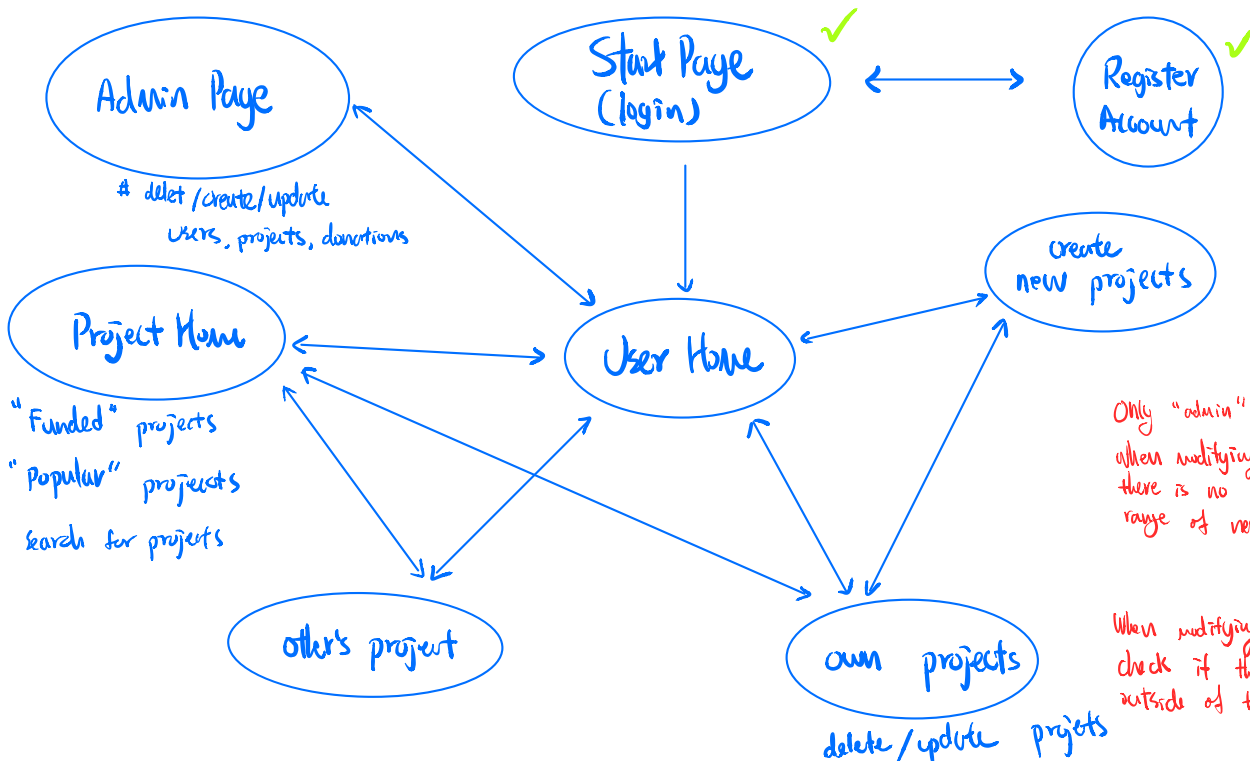duration : MAX = 60 days.

keywords : 60 char

status : ongoing = self-explan.
          can donate
          can edit

funded = duration is up & target is met
         cannot edit
         can only confirm

Web Flow-Chart

Admin Page ✓ Start Page (login) ⟷ Register Account ✓

delet / create / update users, projects, donations

Project Home
"Funded" projects
"Popular" projects
search for projects

User Home

create new projects

other's project

own projects
delete / update projects

Only "admin" is allowed to modify "start_date" when modifying "start_date"; must check there is no donation made outside the range of new startdate.

When modifying the duration, one must check if there is any donation outside of the specified date.

confirm funded
  status : funded → transferred