Mini Project

Step 2

Schema:

Researcher = {researcher\_id (Primary Key), first\_name, last\_name, email\_address, organization}

GrantCompetition = {competition\_id (Primary Key), title, area, description, application\_deadline, status }

GrantProposal = {proposal\_id (Primary Key), amount\_requested, amount\_awarded, status, date\_awarded, other\_collaborators, competition\_id (Foreign Key), principal\_investigator\_id (Foreign Key))}

Reviewer = {reviewer\_id (Primary Key), conflicts\_of\_interest, co\_reviewers, researcher\_id ( Foreign Key), proposal\_id( Foreign Key)}

ReviewerAssignment = {assignment\_id (Primary Key), deadline, submitted, reviewer\_id( Foreign Key), competition\_id (Foreign Key)}

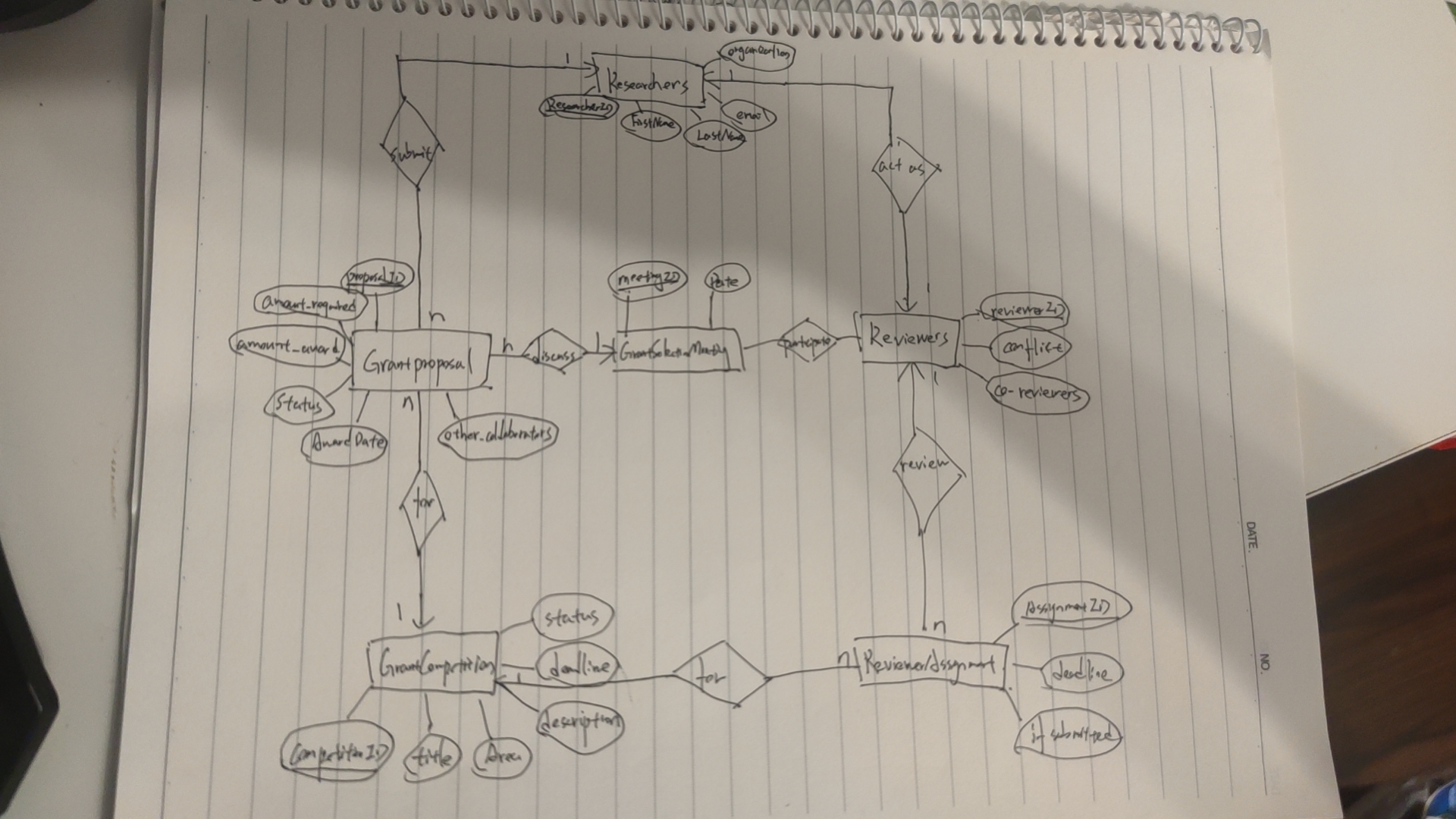
GrantSelectionCommitteeMeeting = {meeting\_id (Primary Key), meeting\_date}

Relationships:

1. Researcher submits Grant Proposal: One-to-Many relationship between Researcher and GrantProposal.
2. Grant Proposal work for Grant Competition: Many-to-One relationship between GrantProposal and GrantCompetition.
3. Reviewers review the Assignment: One-to-Many relationship between reviewAssignment and Reviewer.
4. GrantProposals are discussed in SelectionMeeting: Many-to-One relationship between GrantProposal and SelectionMeeting.
5. Reviewers participate in SelectionMeeting: Many-to-One relationship between Reviewer and SelectionMeeting.
6. Researcher acts as reviewer: One-to-One relationship between Researcher and reviewer
7. reviewAssignment work for GrantCompetition: Many-to-One relationship between reviewAssignment and GrantCompetition.

Step 3

E/R Diagrams



Step 4

Researcher: researcher\_id -> {first\_name, last\_name, email\_address, organization}

GrantCompetiton:competition\_id -> {title, area, description, application\_deadline, status}

GrantProposal:proposal\_id -> {amount\_requested, amount\_awarded, status, date\_awarded, competition\_id, principal\_investigator\_id, other\_collaborators}

Reviewer: reviewer\_id -> {conflicts\_of\_interest, co\_reviewers, researcher\_id , proposal\_id}

ReviewerAssignment:assignment\_id -> {deadline, submitted, reviewer\_id, competition\_id }

SelectionMeeting: meeting\_id -> meeting\_date

Since there are no bad functional dependencies, the design is already in BCNF . Therefore, the design does not allow anomalies and meets the requirements without the need for re-design.