CS5332 – Online Survey Database

Guidance & Support - Dr. Anne Hee Hiong Ngu

Requirements Gathering

- We kick started the project by going through the project overview and specifications shared by our professor Dr. Anne Hee Hiong Ngu.
- Each of us have gone through various online survey websites including but not limited to the websites recommended in the project specification.
    - http://www.surveymonkey.com
    - http://www.limesurvey.org
    - https://social.i-say.com
    - http://www.surveyssay.com
    - https://www.swagbucks.com
    - And few more….
- Each of us has prepared list of initial observations, we had brainstorming meetings on all the observations and understood everyone's views.
- Listed down pros and cons observed.
- We have observed on the survey website "i-Say" that they provide color images for options even for Yes/No.
- We worked individually on preparing a list of Business rules/constraints for all the observations and identified potential Entities and attributes.
- While we were doing all these activities, we have taken surveys available online to understand how they are being conducted and understand what is already available.
- We had a meeting to understand the Rules defined by the others, discussed and finalized on the Entities, Relations, Weak Entities, Attributes etc.
- We have discussed and prepared a list of consolidated Entities, Attributes, Relations etc.
- Once we had the final plan, we have started working on the report to be submitted.
- We have prepared initial drafts of E-R Diagrams, Relational Schema.
- Had numerous group meetings and revised all of them over the course of completing the phase-I of the project.

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Business Rules/Constraints

- A user will be registered and managed by the Admin.
- Admin creates a login for each user. A person identification(PID) for the user to login and a unique identification(UID) for internal uses will be assigned.
- A user will have three possible roles, Admin/Organizer/Participant.
- A person can be a Faculty or Student or an Administration team member.
- A Faculty or a Student (Student Workers working for Faculty) can be an organizer or a Participant.
- An Organizer can create Surveys and Questions.
- Each Survey must belong to a Category.
- A Question can be of any type (Multiple choice questions with single answer/multiple answers, Text input questions, Audio/Video answers (Similar to TOEFL where the user should record the audio response)).
- Participants will take a survey.
- Participant may get score depending on the type of the survey
- Participant gives feedback on the survey.
- Various types of Reports will be generated using the responses of the Participants to the surveys.
- For all Questions, a URL option will be provided to use Images/Audio/Video for options.
- A URL will point to a file in the Volume (A folder with Read/Write access).
- A User cannot take a survey more than once.
- Each survey should have a unique set of questions.
- Each question can be used in more than one Survey.
- A Survey organizer can preview the survey and the score will not be saved to the database.
- Each participant responds to a survey and all the responses are stored in the database.
- Participant score and reward points will be available to them after a survey is finished.
- Admin creates/updates/deletes users(Indirectly manages admin accounts as well)
- Admin can generate any type of reports and access them.
- Survey organizers can generate and access reports of various types.
- Each response stored in the table should be related to a participant and a survey.
- A participant can take multiple surveys; a survey can have multiple surveys.
- Each user should have a login and each login corresponds to a user.

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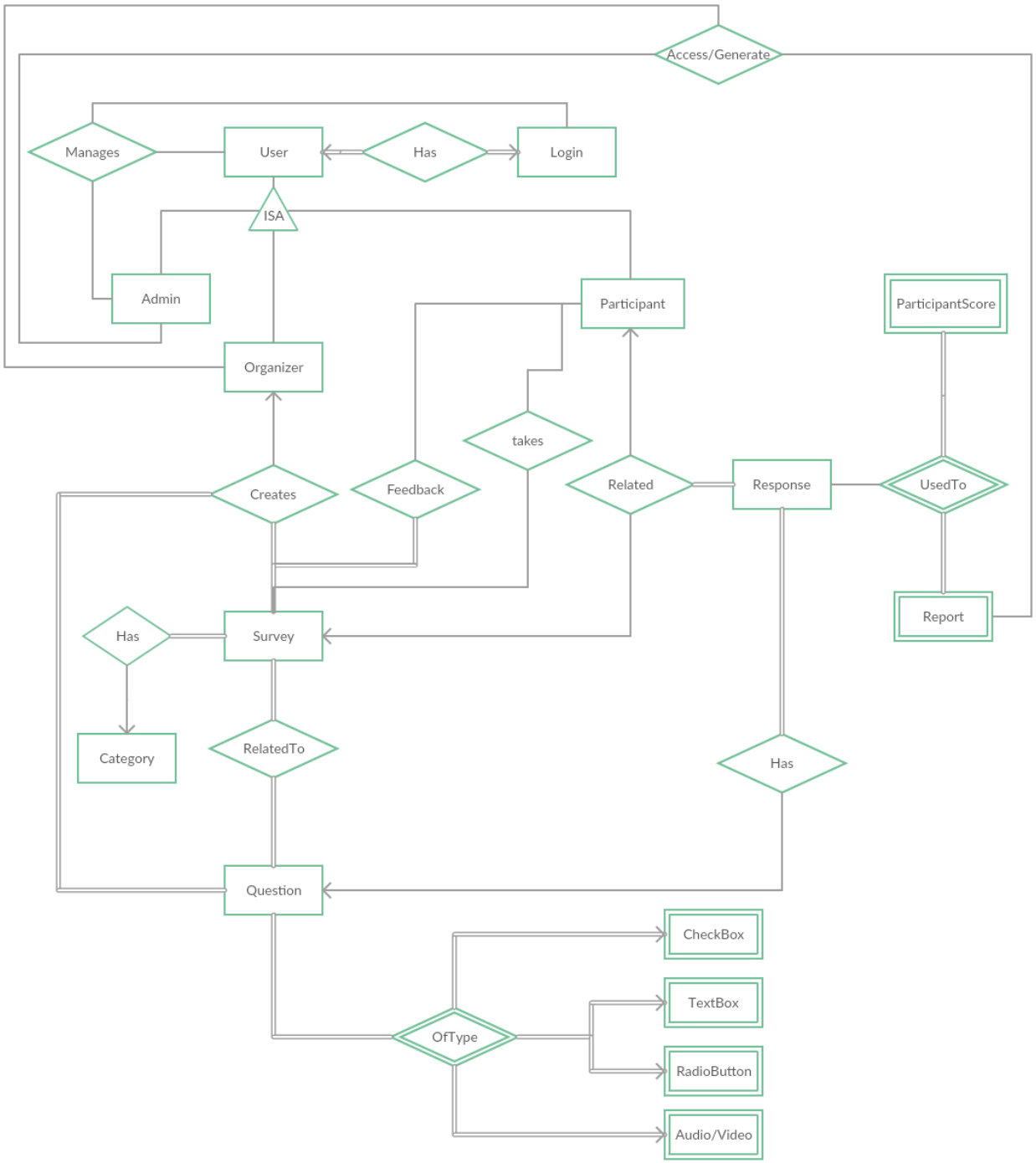
E-R Diagram



Ravikrishna(A04932557) Meghana(A04898234) Jesuloluwa(A04904703)

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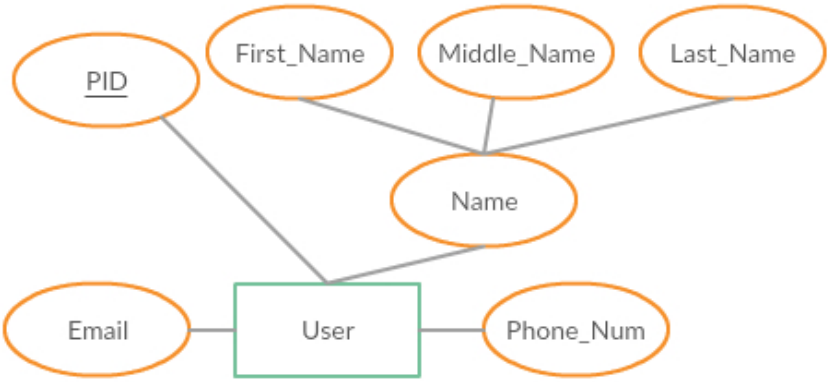
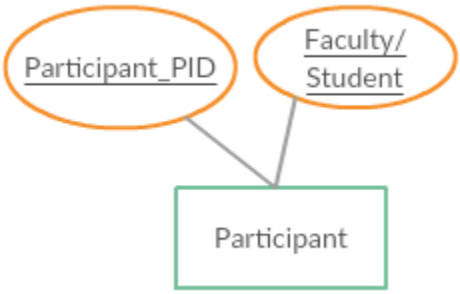
E-R Design for each Entity

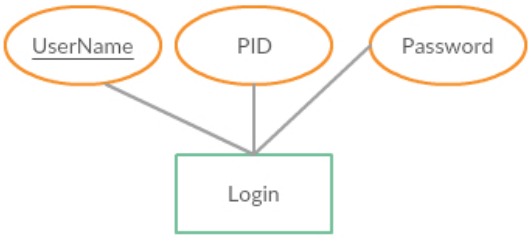
1. User



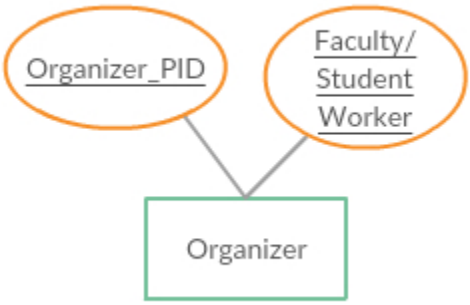
2. Participant



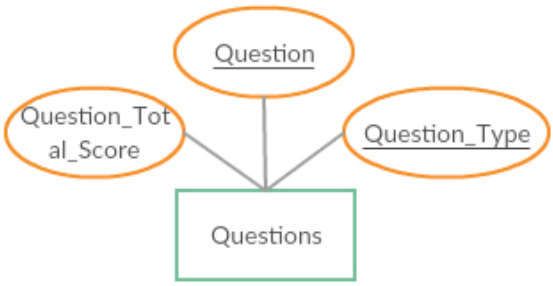
3. Login



4. Organizer

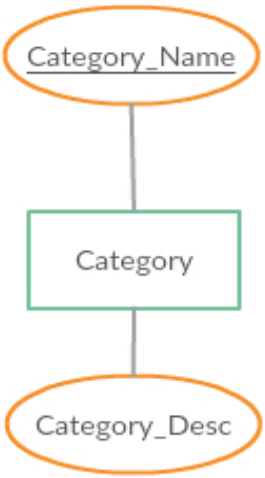


5. Questions

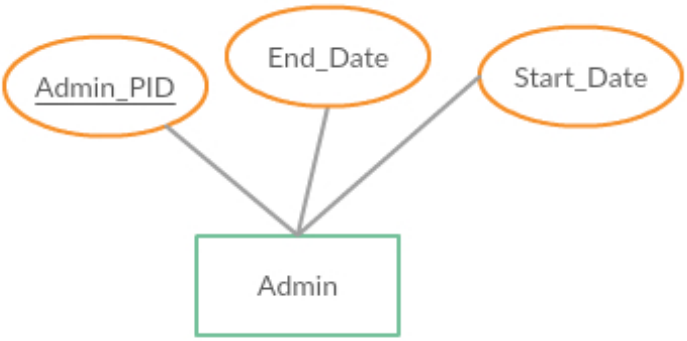


6. Response

7. Category

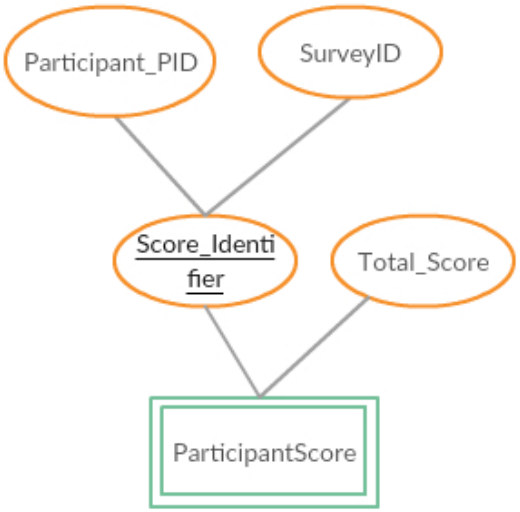


8. Admin

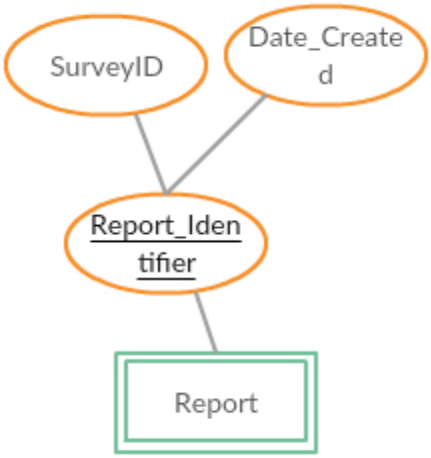


9. Survey

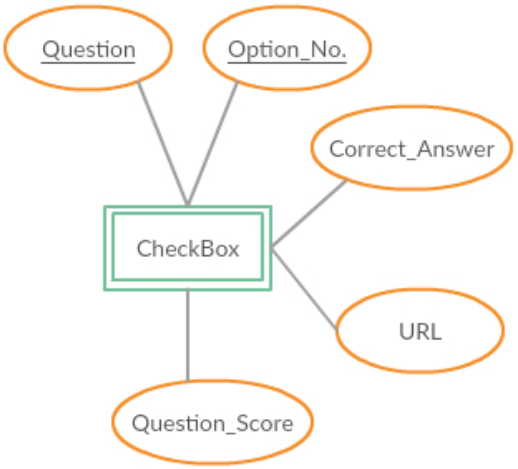
10. ParticipantScore



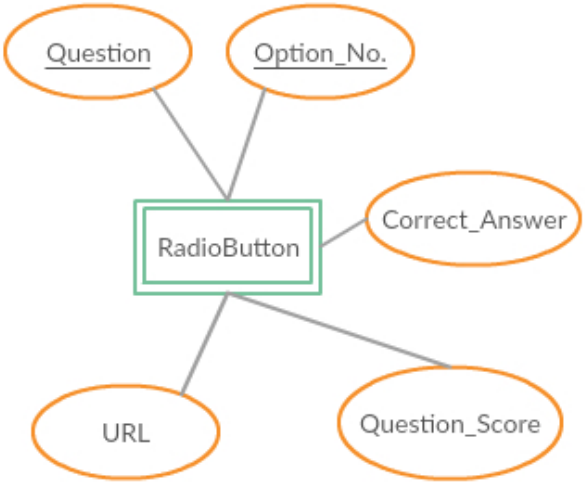
11. Report



12. CheckBox

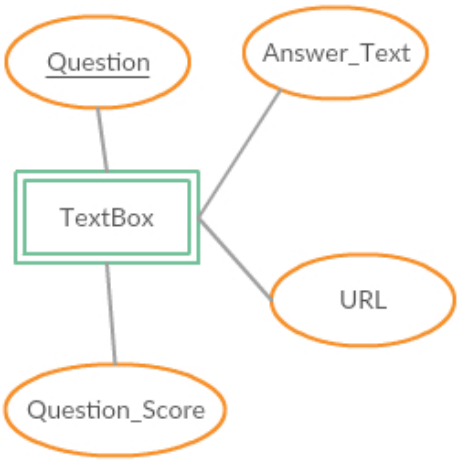


13. RadioButton

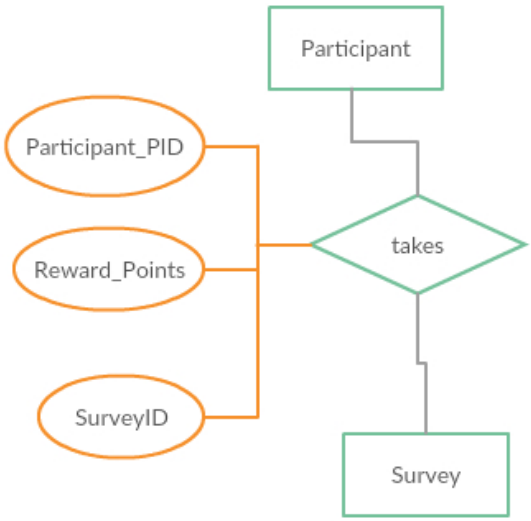


14. Audio/Video

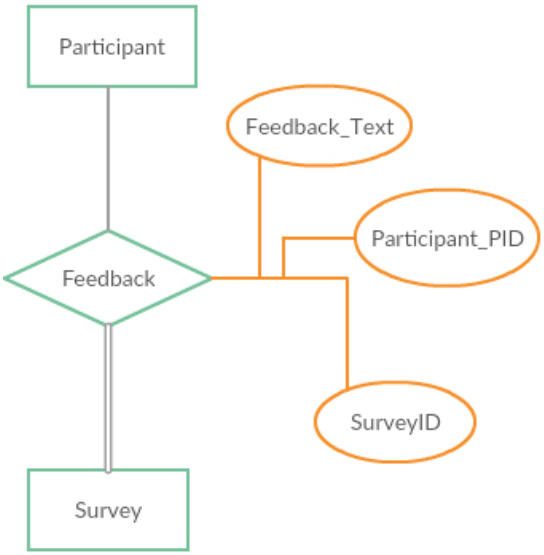
15.TextBox



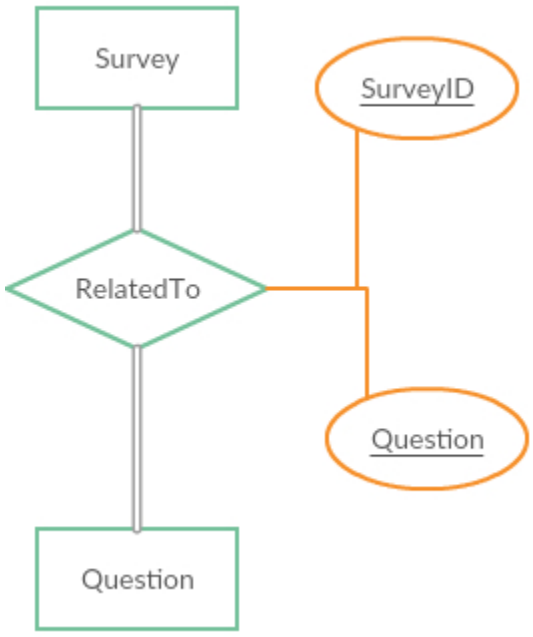
16. Takes



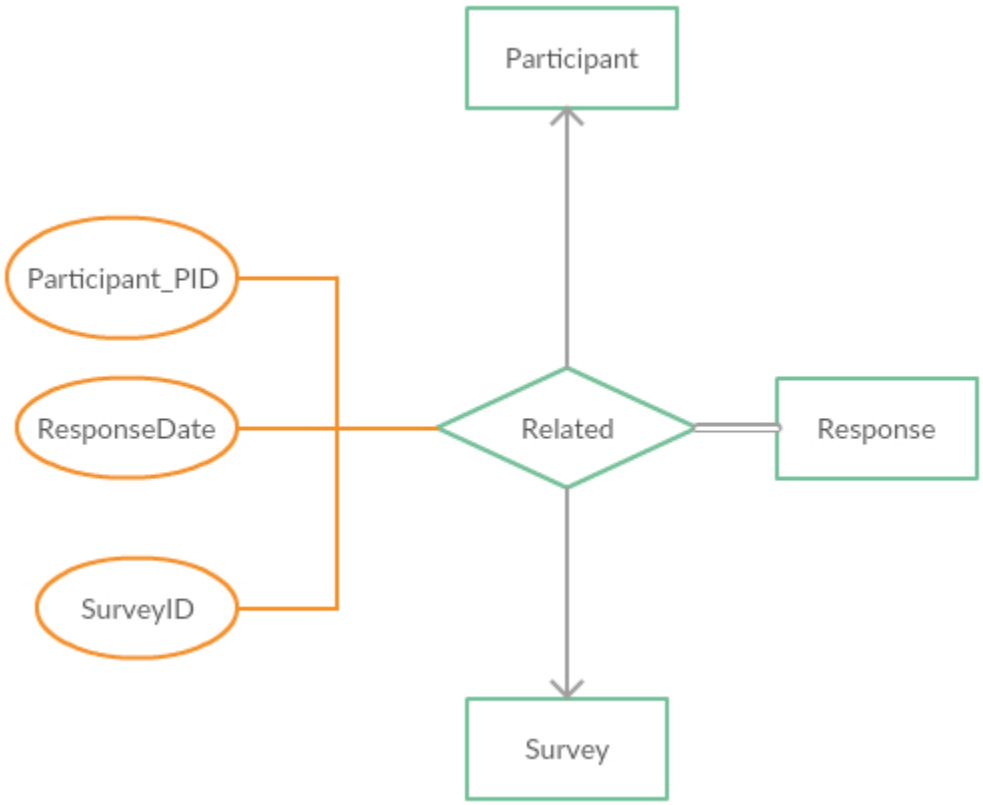
17. Feedback



18. RelatedTo



19. Related



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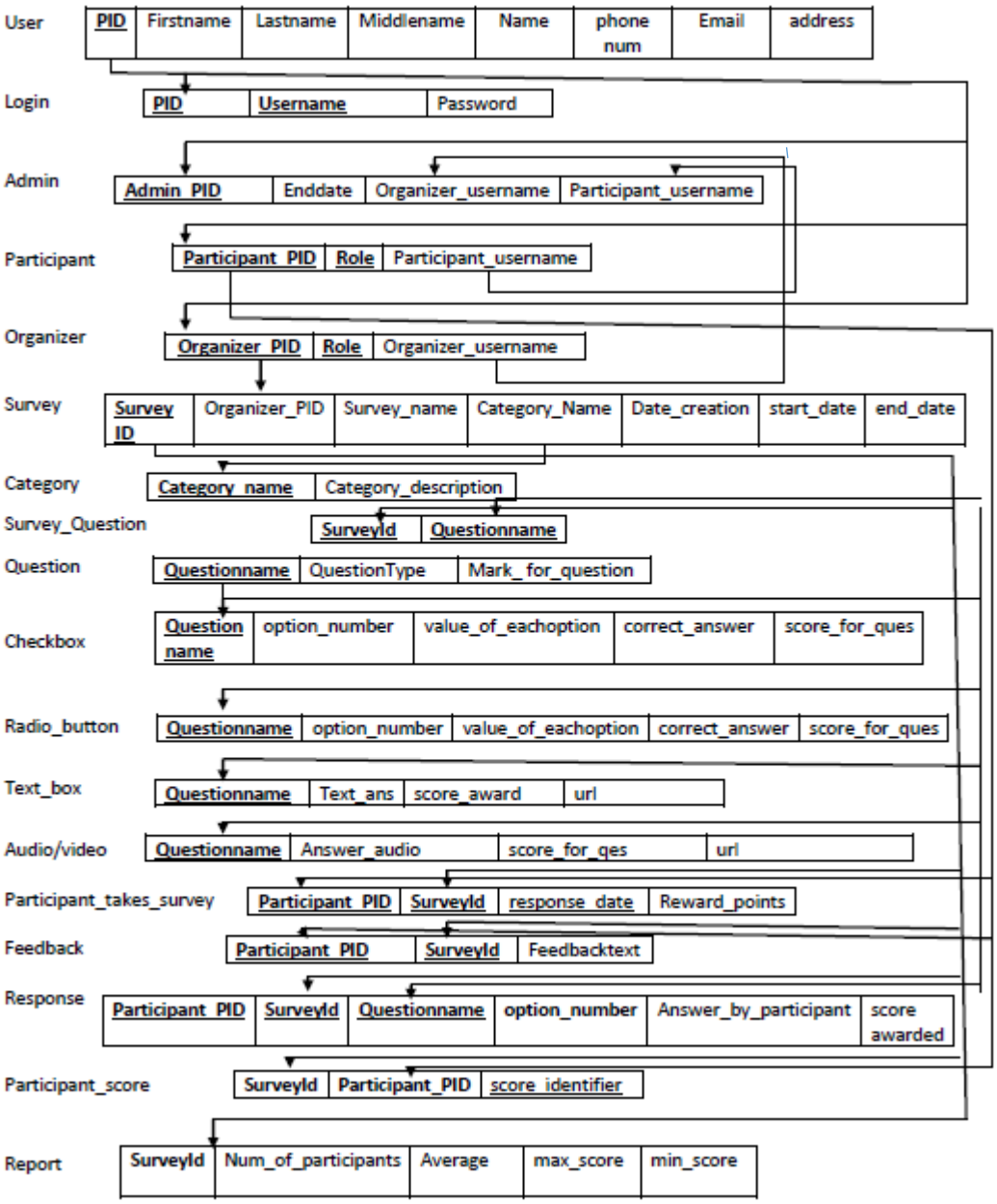
Relational Schema Diagram



Ravikrishna(A04932557) Meghana(A04898234) Jesuloluwa(A04904703)

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Relational Schema Definitions

User (**PID,** Firstname, Lastname, Middlename, Name, phone num, Email, address)
Login (***PID,*** **Username,** Password)
Admin (***Admin_PID,*** **EndDate,** *Organiser_username*, *Participant_username*)
Participant (***Participant_PID*****, Role,** Participant_username)
Organizer (***Organizer_PID,*** **Role,** Organizer_username)
Survey (**SurveyID,** Organizer_PID, Survey_name, *Category_Name***,** Date_creation, start_date, end_date)
Category (**Category_name,** Category_description)
Survey_Question (***SurveyId, Question****)*
Questions (**Question,** QuestionType, Mark_ for_question)
Checkbox (***Question,*** option_number, value_of_eachoption, correct_answer, score_for_ques)
Radio_button (***Question***, option_number, value_of_eachoption, correct_answer, score_for_ques)
Text_box (***Question,*** Text_ans, score_award, url)
Audio/video (***Question,*** Answer_audio, score_for_qes, url)
Participant_takes_survey (***Participant_PID, SurveyId,*** **response_date**, Reward_points)
Feedback (***Participant_PID, SurveyId,*** Feedbacktext)
Response (***Participant_PID, SurveyId, Question,*** option_number, Answer_by_participant, score awarded)
Participant_score (***SurveyId, Participant_PID,*** score_identifier)
Report (***SurveyId,*** Num_of_participants, Average, max_score, min_score)

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Domain of all Attributes

User Types:

String	PID	//To represent the unique Identifier for users
String	Firstname	//To represent the users' First name
String	Lastname	//To represent the users' Last name
String	Middlename	//To represent the users' Middle name
String	Name	//To represent the users' Name which is a combination of the Firstname, Lastname and Middlename
String	Email	//To represent the users' email address
String	Phone_Num	//To represent the users' phone number
String	Address	//To represent the users' Address

Login Types:

String Username	// To represent the users' username for login
String Password	// To represent the users' password for login

Admin Types:

String Admin_PID	// To represent the Admin's identifier
String Start_Date	// To represent the Admin's start date
String EndDate	// To represent the Admin's end date

Organizer Types:

String Organizer_PID	// To represent the Organizer's identifier
String Role	// To represent the Organizer's Role

Participant Types:

String Participant_PID	// To represent the Participant's identifier
String Role	// To represent the Participant's Role

Category Types:

String Category_name	// To represent the name of the Category
String Category_description	// To represent the description of the Category

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Survey Types:

String Survey_Id	// To represent the identifier of the Survey.
String Organizer_PID	// To represent the Organizer's identifier of the Survey. It is also a foreign key
String Survey_name	// To represent the name of the Survey
String Survey_description	// To represent the description of the Survey.
String Category_Name	// To represent the category this survey belongs to.
String Date_creation	// To represent the date the survey was created
String Start_date	// To represent the start date for the survey
String end_date	// To represent the end date for the survey.

Questions Types:

String Question	// To represent the question for a survey
String Question_Type	// To represent the type of Question defined
int Question_Total_Score	// To represent the total score for the Question

Checkbox Types:

String Question	// To represent the question for a survey. It acts as a foreign key
int Option_Number	// To represent the option number of checkboxes question being defined
String Option_Text	// To represent the option text of checkbox question
String Correct_Answer	// To represent the Correct Answer for each Question
String Url	// To represent the url for the question options
int Question_Score	// To represent the score for the Question.

Radio_Button Types:

String Question	// To represent the question for a survey. It acts as a foreign key
int Option_Number	// To represent the option number of Radio Button question
String Option_Text	// To represent the option text of Radio Button question
String Url	// To represent the url for the question options
String Correct_Answer	// To represent the Correct Answer for each Question
int Question_Score	// To represent the score for the Question

Text_Box Types:

String Question	// To represent the question for a survey. It acts as a foreign key
String Answer_Text	// To represent the answer text of the textbox
int Question_Score	// To represent the score for the Question

Audio_Video Types:

String Question	// To represent the question for a survey. It acts as a foreign key
String Url	// To represent the url for the audio/video for the question
int Question_Score	// To represent the score for the Question

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Feedback Types:

String Participant_PID // To represent the participant who is providing a feedback. It is a foreign key

String Survey_Id // To represent the Survey for which the feedback is provided. It is a foreign key.

String Feedback_Text // To represent the Text for the Feedback provided by the Participant

Response Types:

String Participant_PID // To represent the participant who is responding to the survey. It is a foreign key.

String Survey_Id // To represent the Survey whose response is given. it is a foreign key

String Question // To represent the Survey for which the feedback is provided. it is a foreign key

int Option_Number // To represent the Option Number

String Participant_Answer // To represent the answer the participant is given for a survey

int Score_Awarded // To represent the Score awarded for each correct answer if applicable

Participant_Score Types:

String Participant_PID // To represent the participant who took the Survey. It is a foreign key

String Survey_Id // To represent the Survey taken by each participant. it is a foreign key

String Score_Id // To represent the Score of each Survey taken by a Participant

Int Total_Score //Total score obtained by a participant for a survey.

Report Types:

int No_of_Participants // To represent the number of participants that took the Survey

double Average // To represent the average score of the survey responses

int Max_Score // To represent the maximum score of the survey responses

int Min_Score // To represent the minimum score of the survey responses

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Design Decision and Domain of all Attributes (For E-R Diagram)

Entity: User [Admin, Organizer, Participant]	
Primary Key Attribute: PID	
Attributes	**Description**
String PID [<10 chars]	To represent the unique Identifier for users
String Firstname [<50 chars]	To represent the users' First name
String Lastname [<50 chars]	To represent the users' Last name
String Middlename [<50 chars]	To represent the users' Middle name
String Name [<150 chars]	To represent the users' Name which is a combination of the Firstname, Lastname and Middlename
String Email [<150 chars. abcd@gmail.com]	To represent the users' email address
String Phone_Num [<15 chars (123)-456-7890]	To represent the users' phone number
String Address [<150 chars]	To represent the users' Address

- We have further categorised User into Admin, Organizer and Participant.
- We consider that the Admin, Organizer and Participant are users of the Survey System.

- The Name Attribute is a **Composite Attribute** which consists of the User's First Name, Middle Name and Last Name.

- User **ISA** Admin, Organizer or Participant. [**Superclass** and **Sub-Class Relationship**].

- User **Has** Login [One to One].
- Each Login must have exactly a User while Each User must also have exactly a Login. Therefore, Both Login and User are in **Total Participation.**

Entity: Login	
Primary Key Attribute: Username	
Foreign Key Attribute: PID	
Attributes	**Description**
String Username [<50 chars]	To represent the users' username for login
String Password [<100 chars]	To represent the users' password for login

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Entity: Admin	
Primary Key Attribute: End_Date	
Foreign Key Attribute: Admin_PID	
Attributes	**Description**
String Admin_PID [<50 chars]	To represent the Admin's identifier
String Start_Date [<50 chars]	To represent the Admin's start date
String EndDate [<50 chars]	To represent the Admin's end date

- Admin **Manages** User in the survey system. [Many to Many Recursive].
- Not all Admin Manages a User but All User can be Managed by an Admin, therefore, User is in **Total Participation** while Admin is in **Partial Participation.**

- Admin **Manages** Login for User. [Many to Many].
- Login cannot exist if Not Created by an Admin while Admin cannot exist without having a Login, Therefore Both are in **Total Participation**.

- Admin **Access** Report. [Many to Many].
- All Admin can Access a Report and All Report can be Accessed making Both of them in **Partial Participation**.

Entity: Organizer	
Primary Key Attribute: Role	
Foreign Key Attribute: Organizer_PID	
Attributes	**Description**
String Organizer_PID [<50 chars]	To represent the Orgranizer's identifier
String Role [<50 chars]	To represent the Orgranizer's Role

- Organizer **Creates** Surveys. [One to Many].
- Organizer can create many surveys and not all surveys are associated with the Organizers, so its in **Partial Participation** while all Surveys are associated with the Organizers making Surveys be in **Total Participation**.

- Organizer **Creates** Questions. [One to Many].
- Not all Questions are associated with the Organizer, so its in **Partial Participation** while all Questions are associated with the Organizer making Questions be in **Total Participation**.

- Organizer **gets** Feedback from Participant for Each Survey. [One to Many].
- Not all Questions are associated with the Organizer, so its in **Partial Participation** while all Questions are associated with the Organizer making Questions be in **Total Participation**.

Entity: Participant
Primary Key Attribute: Role
Foreign Key Attribute: Participant_PID

Attributes	Description
String Participant_PID [<50 chars]	To represent the Participant's identifier
String Role [<50 chars]	To represent the Participant's Role

- Participant **Take** Surveys. [One to Many].
- Each Survey are taken by at least one Participant, therefore, Survey is in **Total Participation** while not all Participant can take a Survey, so Participant is in **Partial Participation.**

- Participant **Gives** Feedback. [One to Many].
- Each Feedback are given by at least one Participant, therefore, Feedback is in **Total Participation** while not all Participant can give a Feedback, so Participant is in **Partial Participation.**

Entity: Category

Primary Key Attribute: Category_name

Attributes	Description
String Category_name [<50 chars]	To represent the name of the Category
String Category_description [<150 chars]	To represent the description of the Category

Entity: Survey

Primary Key Attribute: Survey_Id

Attributes	Description
String Survey_Id [<50 chars]	To represent the identifier of the Survey.
String Organizer_PID [<50 chars]	To represent the Organizer's identifier of the Survey. It is also a foreign key
String Survey_name [<50 chars]	To represent the name of the Survey.
String Survey_description [<50 chars]	To represent the description of the Survey.
String Category_Name [<50 chars]	To represent the category this survey belongs to.
String Date_creation [<50 chars]	To represent the date the survey was created.
String Start_date [<50 chars]	To represent the start date for the survey.
String end_date [<50 chars]	To represent the end date for the survey.

- Survey **Has** Category. [Many to One].
- all Surveys must have a Category while Category may not belong to a Survey. Therefore, making the Survey be in **Total Participation** and Category in **Partial Participation.**

- Survey **Has** Question. [Many to Many].
- Surveys must have Question while Question form a Survey. Therefore, making the Survey and

Question in **Total Participation.**

- Surveys are **TakenBy** Participants. [One to Many].
- Surveys can be taken by Participants while not all Participants can take Survey. Therefore, making the Survey and Participant in **Partial Participation.**

Entity: Questions

Primary Key Attribute: Question

Attributes	**Description**
String Question [<50 chars]	To represent the question for a survey
String Question_Type [<50 chars]	To represent the type of Question defined.
int Question_Total_Score [Typically a number]	To represent the total score for the Question.

- We further represented Question as a type of **Checkbox**, **TextBox**, **RadioButton**, **Audio_Video** Questions. Therefore, **Checkbox**, **TextBox**, **RadioButton**, **Audio_Video** Questions are weak entities. without Question, the Weak entities cannot exist.

- Question **has** Response [One to Many].
- Each Question have at least one Response while each Response belong to a Question. So Question is in **Partial Participation** while Response is in **Total Participation**.

Entity: Checkbox

Foreign Key Attribute: Question

Attributes	**Description**
String Question [<50 chars]	To represent the question for a survey. It acts as a foreign key
int Option_Number [typically a number]	To represent the option number of checkbox question being defined.
String Option_Text [<50 chars]	To represent the option text of checkbox question.
String Correct_Answer [<50 chars]	To represent the Correct Answer for each Question.
String Url [<200 chars]	To represent the url for the question options.
int Question_Score [typically a number]	To represent the score for the Question.

- The Checkbox serves as a weak entity to the Question Entity.

Entity: Radio_Button

Foreign Key Attribute: Question

Attributes	**Description**
String Question [<50 chars]	To represent the question for a survey. It acts as a foreign key
int Option_Number [typically a number]	To represent the option number of Radio Button question.

String Option_Text [<50 chars]	To represent the option text of Radio Button question.
String Url [<200 chars]	To represent the url for the question options.
String Correct_Answer [<50 chars]	To represent the Correct Answer for each Question.
int Question_Score [typically a number]	To represent the score for the Question.
• The Radio_Button serves as a weak entity to the Question Entity.	
Entity: Text_Box	
Foreign Key Attribute: Question	
Attributes	**Description**
String Question [<50 chars]	To represent the question for a survey. It acts as a foreign key
String Answer_Text [<100 chars]	To represent the answer text of the textbox.
int Question_Score [typically a number]	To represent the score for the Question.
• The Text_Box serves as a weak entity to the Question Entity.	
Entity: Audio_Video	
Foreign Key Attribute: Question	
Attributes	**Description**
String Question [<50 chars]	To represent the question for a survey. It acts as a foreign key
String Url [<200 chars]	To represent the url for the audio/video for the question.
int Question_Score [typically a number]	To represent the score for the Question.
• The Audio_Video serves as a weak entity to the Question Entity.	
Entity: Feedback	
Primary Key Attribute: Participant_PID and Survey_Id	
Attributes	**Description**
String Participant_PID [<50 chars]	To represent the participant who is providing a feedback. it is a foreign key
String Survey_Id [<50 chars]	To represent the Survey for which the feedback is provided. it is a foreign key.
String Feedback_Text [<250 chars]	To represent the Text for the Feedback provided by the Participant.
• Particpants make Feedbacks for each Survey taken	
Entity: Response	
Primary Key Attribute: Participant_PID, Survey_Id and Question	
Attributes	**Description**
String Participant_PID [<50 chars]	To represent the participant who is responding to the survey. it is a foreign key
String Survey_Id	To represent the Survey whose response is given. it is a foreign key.

[<50 chars]	
String Question [<50 chars]	To represent the Survey for which the feedback is provided. it is a foreign key.
int Option_Number [typically a number]	To represent the Option Number.
String Participant_Answer [<50 chars]	To represent the answer the participant is given for a survey
int Score_Awarded [typically a number]	To represent the Score awarded for each correct answer if applicable

- Responses are **UsedTo** generate Participant_Score. [Many to Many].
- Participant_Score cannot exist without responses while Responses can, making Participant_Score be in **Total Participation** while Responses in **Partial Participation**
- Responses are **UsedTo** generate Report. [Many to Many].
- Reports cannot exist without responses while Responses can, making Reports be in **Total Participation** while Responses in **Partial Participation**
- Participant_Score and Report are weak Entities of Response

Entity: Participant_Score

Primary Key Attribute: Score_Id

Attributes	**Description**
String Participant_PID [<50 chars]	To represent the participant who took the Survey. it is a foreign key
String Survey_Id [<50 chars]	To represent the Survey taken by each participant. it is a foreign key.
String Score_Id [<50 chars]	To represent the Score of each Survey taken by a Participant.

- Participant_Score can be **Accessed** by Organizer. [Many to One].
- All Participant_Score can be accessed by either the Organizer therefore the Participant_Score is in **Total Participation** while Organiser are in **Partial Participation.**

Entity: Report

Primary Key Attribute: Survey_Id

Attributes	**Description**
int No_of_Participants [typically a number]	To represent the number of participants that took the Survey.
double Average [typically a real number]	To represent the average score of the survey responses.
int Max_Score [typically a number]	To represent the maximum score of the survey responses.
int Min_Score [typically a number]	To represent the minimum score of the survey responses.

- Report can be **Accessed** by Admin or Organizer. [Many to One].
- All report can be accessed by either the Admin or Organizer therefore the Report is in **Total Participation** while admin or Organiser are in **Partial Participation.**

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Description for mapping E-R Diagram to Relational Schema Diagram

1. How you handled n:m relationships?

- The “RelatedTo” relationship between Survey Entity and Question Entity is handled by adding a relation called “relatedTo”. In this relation, Survey_id and Question are included as foreign keys.

- The “Feedback” relationship between Survey Entity and Participant Entity is handled by adding a relation called “Feedback”. In this relation, Survey_id and Participant_PID are included as foreign keys.

- The “Manages” relationship between Admin Entity and Login Entity is handled by adding a relation called “Manages”. In this relation, Admin_Pid and Username are included as foreign keys.

- The “Manages” relationship between Admin Entity and User Entity is handled by adding a relation called “Manages”. In this relation, Admin_Pid and PID for the User being Managed are included as foreign keys.

- The “Access” relationship between Admin Entity and Login Entity is handled by adding a relation called “Manages”. In this relation, Admin_Pid and Username are included as foreign keys.

- The “UsedTo” relationship between Response Entity and Participant_Score Entity is handled by adding a relation called “UsedTo”. In this relation, Particpant_score is a weak Entity of the Response Entity.

- The “UsedTo” relationship between Response Entity and Report Entity is handled by adding a relation called “UsedTo”. In this relation, Report is a weak Entity of the Response Entity.

2. How you handled ternary relationships?

- The “Related” relationship between Survey Entity, Participant Entity and Response Entity is handled by adding a relation called “related”. In this relation, Survey_id and Participant_Id are included as foreign keys in the Response Entity.
  “Related” relationship between Survey Entity and Participant Entity is that Each Entity is Take by Participants and Participants can take many Surveys.

- The “Access/Generate” relationship between Admin Entity, Report Entity and Orgranizer Entity is handled by adding a relation called “Access/Generate”. In this relation, Admin_id and Organizer_Id are able to access Report Entity.

3. How you handled recursive relationships?

- The “manages” relationship between Admin Entity and User Entity is handled by adding a relation called “manages”. In this relation, Admin can manage variety of User.

4. How you mapped multi valued attributes to Relational Model?

- We do not have multi-attribute in our project

5. How you handled inheritance?

- For Subclasses Inheritance between the “User” and “Admin, Organizer and Participant “, the ISA is inserted to indicate that a User can either be Admin or Organizer or Participant.

6. Informally State any constraints that you can represent in ER design but cannot be mapped to relational design.

- Access control for the Users was represented in the ER design but cannot be mapped to relational design

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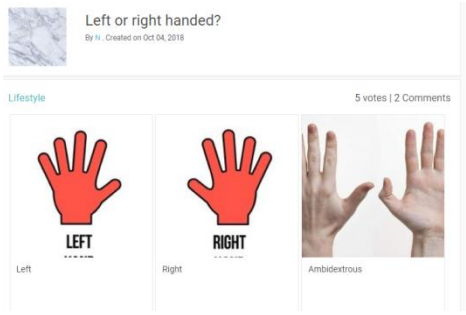
Assumptions, Challenges and Not Included

- We assume that each of the options in the survey question can have an image as illustrated below.



- For Yes/No options also, we will have images. Below is an example.
- We assume that public/anonymous surveys will create user logins as well to avoid ambiguity.
- We assume that new type of questions can be supported by just adding a weak entity.
- We assume that a score can be generated for each of the surveys and for all the participants using the responses table.
- We assume that the Report table can be extended to weak entities to support numerous and variety of reports.
- We assume that a faculty/admin can authorize student workers to create and manage surveys.
- We assume that a survey cannot be deleted as we would need it to use as a knowledge base for future use.
- We assume that a participant will get reward points for each of the survey they participate in.
- We are not supporting anonymous user participation in the surveys as each survey will give rewards.
- We assume that each admin account will have an expiry or end date which needs to be renewed periodically. So that a valid admin can be identified based on the PID and a valid end date.
- Organizer cannot assign surveys to participants once the survey has been scheduled to run(using start date of the survey)

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Group Meeting Log:

Date	Participants	Notes
09-06-2018	Jesuloluwa Meghana Ravikrishna	Formed a group. Started going through the project specifications and sample report shared by the professor to understand what & how should be delivered.
09-13-2018	Jesuloluwa Meghana Ravikrishna	Had an initial discussion on what to be done and scheduled meetings on Tuesday & Thursday mornings until phase-1 is complete. All of us agreed to be available for ad hoc meetings based on the need. Ravikrishna to maintain the log for the project.
09-14-2018	Jesuloluwa Meghana Ravikrishna	Started going through various online survey websites (Best few and last few) to understand pros and cons. All three of us have done this individually so that we can come up with vast variety of views and opinions. Plan is to consolidate all the observations and start working on the business rules.
09-15-2018	Jesuloluwa Meghana Ravikrishna	Ravikrishna - Shared initial observations of the online survey websites. Jesuloluwa - shared the initial observation of the survey monkey website. Meghana - Shared an initial copy of the business rules and ER diagrams.
09-18-2018	Jesuloluwa Ravikrishna	Meeting to discuss on the initial observations. Shared thoughts and ideas.
09-20-2018	Jesuloluwa Meghana Ravikrishna	Continued Brainstorming to discuss and consolidate the gathered information. Each of us explained our observations and ideas. Planed to prepare the business rules and Entities. Agreed to meet again with each of us coming up with Business Rules, Entities and Attributes list for the observations shared by everyone. Meet on Monday and finalize the entities, attributes and relations so that each one of us can take up an activity(E-R Diagram, Relational Schema definition and domain of all attributes, Design Decision & Domain of all attributes(for E-R Diagram)).
09-26-2018	Jesuloluwa Meghana	Meghana - shared the Business rules/constraints and possible entities and attributes. Jesuloluwa - Shared the Business rules/constraints
09-27-2018	Jesuloluwa Meghana Ravikrishna	Met and discussed on the Business rules developed so far. Planned the future course of actions and next meeting schedule. Ravikrishna – Shared the business rules. Started preparing the report to record the requirements gathering information. Updated the report document and made a template.

09-28-2018	Jesuloluwa Meghana Ravikrishna	Shared the work and started preparing initial drafts of each of the deliverables.
10-02-2018	Jesuloluwa Meghana Ravikrishna	Had a meeting, reviewed each other's developments and proposed recommended changes. Started working on the final deliverables.
10-03-2018	Jesuloluwa Meghana Ravikrishna	Consolidated the deliverables and included everything in the report.
10-04-2018	Jesuloluwa Meghana Ravikrishna	Final review and submit.