Chapter 5: Data Modeling

Noun	Attributes	Description	Remarks
Student	Name, roll, email, password, list(event url)	Potential Data Object	Accepted
Name		An Attribute of Student, Teacher, Admin	Rejected
Email		An Attribute of Student, Teacher, Admin	Rejected
Password		An Attribute of Student, Teacher, Admin	Rejected
Roll		An Attribute of Student	Rejected
Admin	Name, designation, email, password, list(event url)	Potential Data Object	Accepted
Teacher	Name, designation, email, password, list(event url)	Potential Data Object	Accepted
Designation		An Attribute of Teacher and Admin	Rejected
Event	Event url, name, description, list (sub-event), start date, duration, notification	Potential Data Object	Accepted
Description		An Attribute of Teacher, Admin and Event	Rejected
Start date		An Attribute of Event	Rejected
Duration		An Attribute of Event	Rejected
Sub-Event	Name, start, duration, notification	Potential Data Object	Accepted
Template	Template url, name, list(sub event of template), duration	Potential Data Object	Accepted
Sub Event of Template	Name, start, duration	Potential Data Object	Accepted

5.3 Data Objects and Attributes

This is a brief view of all attributes I have found so far.

Student = Name + Email + Roll+ Password +list (event url)
Admin = Name + Email + designation + Password + list (event url)
Teacher = Name + Email + designation + Password + list (event url)
Event = event url + name + description + list(sub-event) + duration + start date + notification
Sub-Event = name + description + duration + start date + notification
Template = template url + name +list(Sub event of template) + duration
Sub event of template = name + start + duration

Student	
Attributes	Types
Name Roll Email Password List<Event url>	Varchar (30) Int (10) Varchar (30) Varchar (30)

Admin	
Attributes	Types
Name Designation Email Password List<Event url>	Varchar (30) Varchar (30) Varchar (30) Varchar (30)

Teacher	
Attributes	Types
Name Designation Email Password List<Event url>	Varchar (30) Varchar (30) Varchar (30) Varchar (30)

Event	
Attributes	Types
Event url Name description duration start date notification list< Sub event>	Varchar (30) Varchar (30) Varchar (500) Int (10) Date Boolean

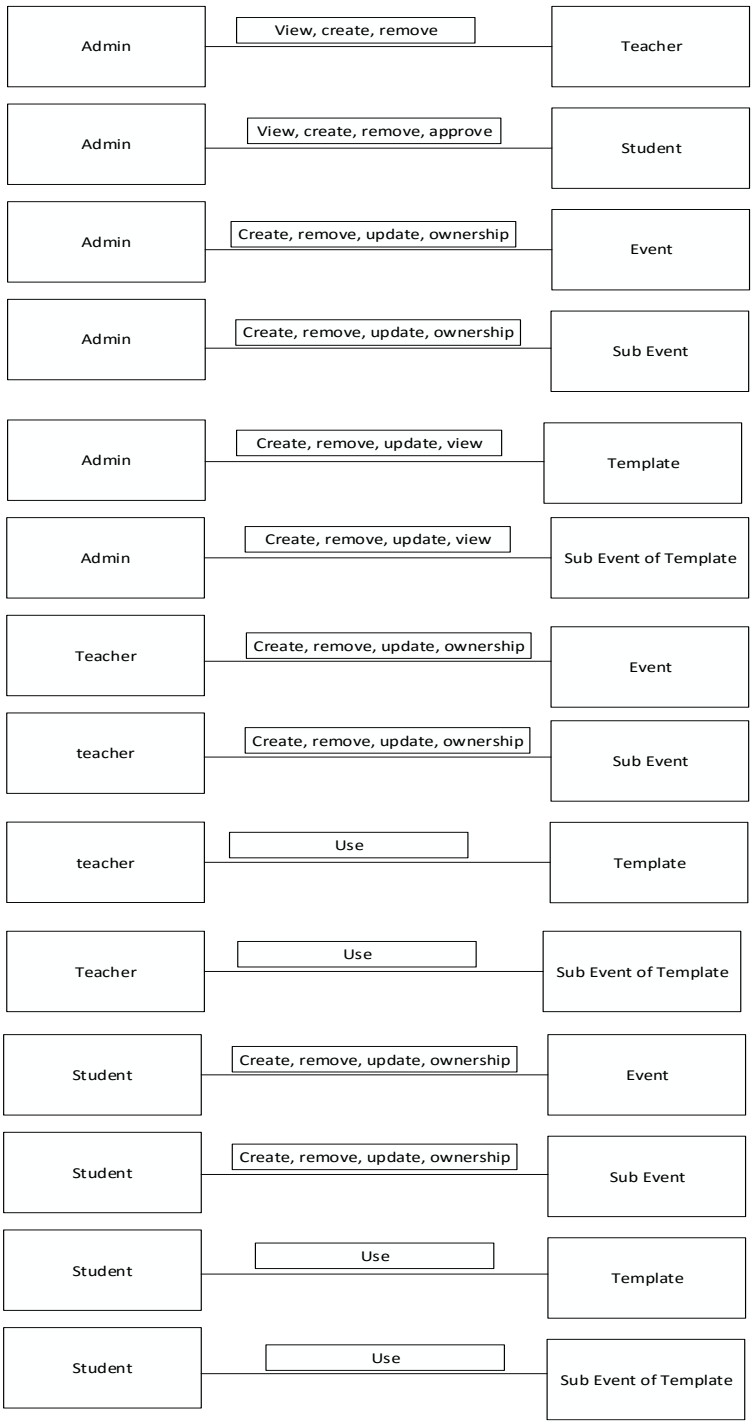
Sub-Event	
Attributes	Types
Name description duration start notification	Varchar (30) Varchar (30) Int (10) Date Boolean

Template	
Attributes	Types
Template url Name duration list<Sub event of template>	Varchar (30) Varchar (30) Int (10)

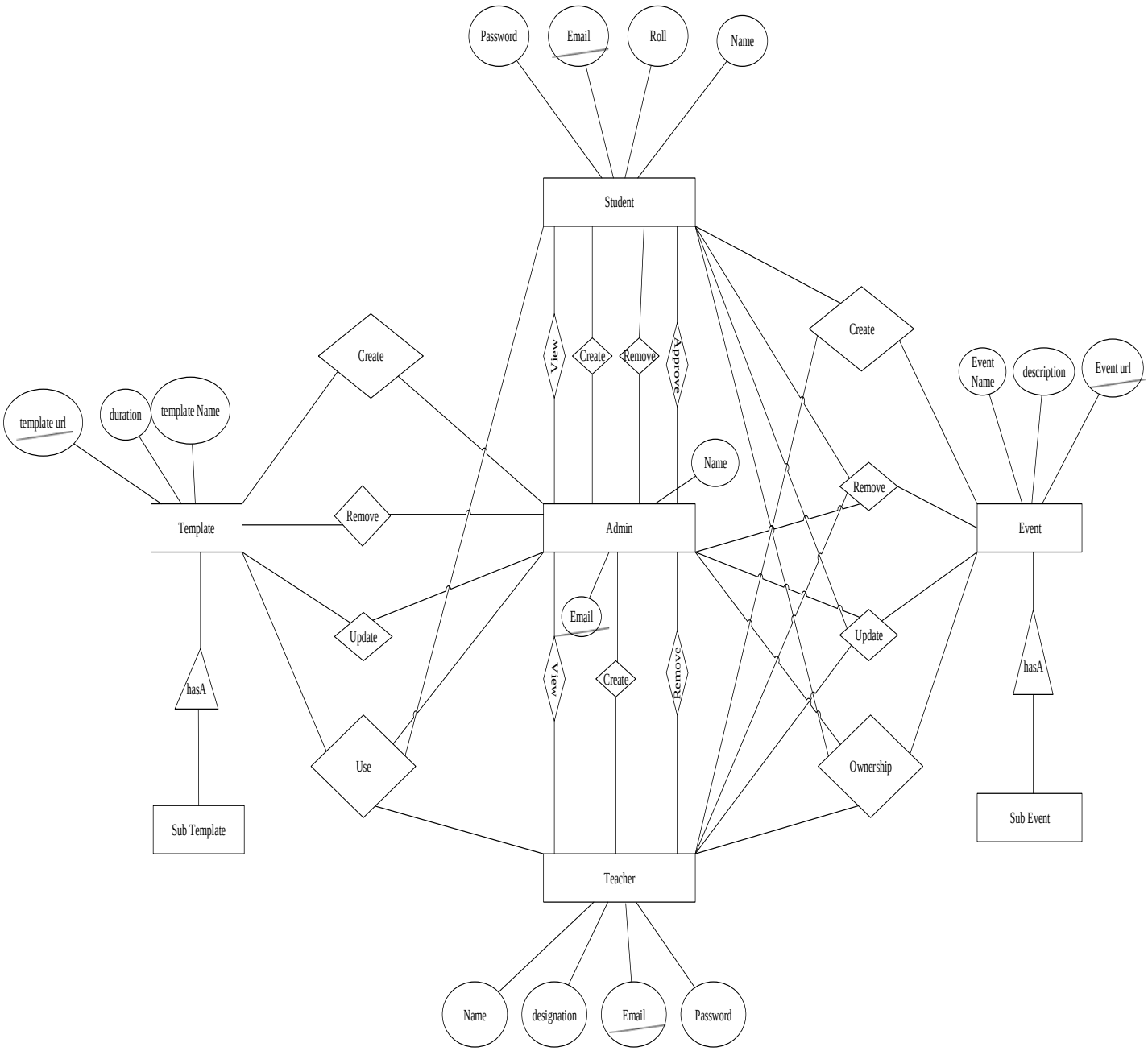
Sub event of template	
Attributes	Types
Name Start Duration	Varchar (30) Int (10) Int (10)

5.4 Relationship Between Data Objects

Here we have shown pair wise relation between two entities.



5.5 Entity Relationship(ER) Diagram



Chapter 6: Class Based Modeling

6.1 Introduction

Class based modeling is designed to demonstrate the whole software on the view or perspective of object oriented concept. In this model what the objects are and what their responsibilities will be, how they will interact with each other is defined very clearly.

6.2 General Classifications

After selecting the nouns by grammatical parsing from the solution space of the story, these are characterized in seven general classifications. The seven general characteristics are as follow:

1. External entities
2. Things
3. Occurrences
4. Roles
5. Organizational units
6. Places
7. Structures

Here the ‘passed’ nouns are the potential classes and the ‘failed’ nouns become the attributes of the classes.

Table 6.1: General Classification

Noun	General Classifications	Remarks
Student	4, 5, 7	Yes
Name		No
Email		No
Password		No
Roll		No
Admin	4, 5, 7	Yes
Teacher	4, 5, 7	Yes
Designation		No
Event	7	Yes
Event name		No
Description		No

Start date		No
Duration		No
Event owner		No
Sub event	7	Yes
Notification		No
Template	7	Yes
Sub Event of Template	7	Yes

6.3 Selection Criteria

The potential classes are then selected as class by six ‘selection characteristics’. A potential class becomes a class when it fulfills all six characteristics.

1. Retained Information
2. Needed Services
3. Multiple Attributes
4. Common attributes
5. Common operations
6. Essential requirements

Table 6.2: Selection Criteria

Noun	Selection Criteria	Remarks
Student	1, 2, 3, 4, 5, 6	Yes
Admin	1, 2, 3, 6	Yes
Teacher	1, 2, 3, 4, 5, 6	Yes
Event	1, 2,3, 4,5,6	Yes
Sub event	1,2,3,4,5,6	Yes
Template	1,2,3,4,5,6	Yes
Sub Event of Template	1,2,3,4,5,6	Yes

Primary classes:

1. Student
2. Admin
3. Teacher
4. Event
5. Sub Event
6. Template
7. Sub Event of Template

I will also need Database class to manage all operations with database.

6.4 Attribute Selection

Table 6.3: Attribute Selection

Class Name	Attributes
Student	Name, roll, email, password, list <Event url>
Admin	Name, designation, email, password, list <Event url>
Teacher	Name, designation, email, password, list <Event url>
Event	Event name, description, start date, duration, list<sub Event>
Sub Event	Sub Event name, description, start, duration, notification
Template	Template name, duration, list<sub Event of Template>
Sub Event of Template	Sub Event of Template name, duration, start
Database	All attributes

6.5 Method Identification

Table 6.4: Method Identification

Class Name	Methods
Student	Get() Set() Sign Up() Sign_in() Sign_out() Change_password() Create event() Remove event() Update event()
Admin	Get() Set() Sign_in() Sign_out() Change_password() Create_user() Remove_user() Add user()

	Remove user() Verify_user_requesst() Delete_user_request() Create event() Remove event() Update event() Create template() Remove template() Update template()
Teacher	Get() Set() Sign_in() Sign_out() Change_password() Create event() Remove event() Update event()
Event	Insert() Delete() Update() View()
Sub Event	Insert() Delete() Update() View()
Template	Insert() Delete() Update() View()
Sub Event of Template	Insert() Delete() Update() View()
Database	Insert() Delete() Update() View()

6.6 Class Card

Student	
Attributes	Methods
Name Roll Email Password list <Event url>	Get() Set() Sign Up() Sign_in() Sign_out() Change_password() Create event() Remove event() Update event()
Responsibilities	Collaborative Class
Create / Remove / Update Event	Database, Event, Sub event, Template, Sub event of template

Admin	
Attributes	Methods
Name Designation Email Password list <Event url>	Get() Set() Sign_in() Sign_out() Change_password() Create_user() Remove_user() Remove user() Verify_user_requesst() Delete_user_request() Create event() Remove event() Update event() Create template() Remove template() Update template()
Responsibilities	Collaborative Class
Create / Remove / Update Event	Database, Event, Sub event, Template, Sub event of template
Create / Remove / Update Event	Database, Template, Sub event of template
Create User	Database, Admin, Student, Teacher
Remove User	Database, , Admin, Student, Teacher

Teacher	
Attributes	Methods
Name Designation Email Password list <Event url>	Get() Set() Sign_in() Sign_out() Change_password() Create event() Remove event() Update event()
Responsibilities	Collaborative Class
Create / Remove / Update Event	Database, Event, Sub event, Template, Sub event of template

Database	
Attributes	Methods
All attributes	Insert() Delete() Update() View()
Responsibilities	Collaborative Class
Insertion	
Deletion	
Updating	
Viewing	Student, Teacher, Admin, Event, Template

Event	
Attributes	Methods
Event name Description Start date Duration list<sub Event>	Insert() Delete() Update() View()
Responsibilities	Collaborative Class
Viewing	Student, Teacher, Admin, Event, Template

Sub Event	
Attributes	Methods
Sub Event name Description Start Duration Notification	Insert() Delete() Update() View()
Responsibilities	Collaborative Class
Viewing	Student, Teacher, Admin, Event, Template

Template	
Attributes	Methods
Template name Duration list<sub Event of Template>	Insert() Delete() Update() View()
Responsibilities	Collaborative Class
Viewing	Student, Teacher, Admin, Event, Template

Sub event of Template	
Attributes	Methods
Sub Event of Template name Duration Start	Insert() Delete() Update() View()
Responsibilities	Collaborative Class
Viewing	Student, Teacher, Admin, Event, Template

6.7 CRC Diagram

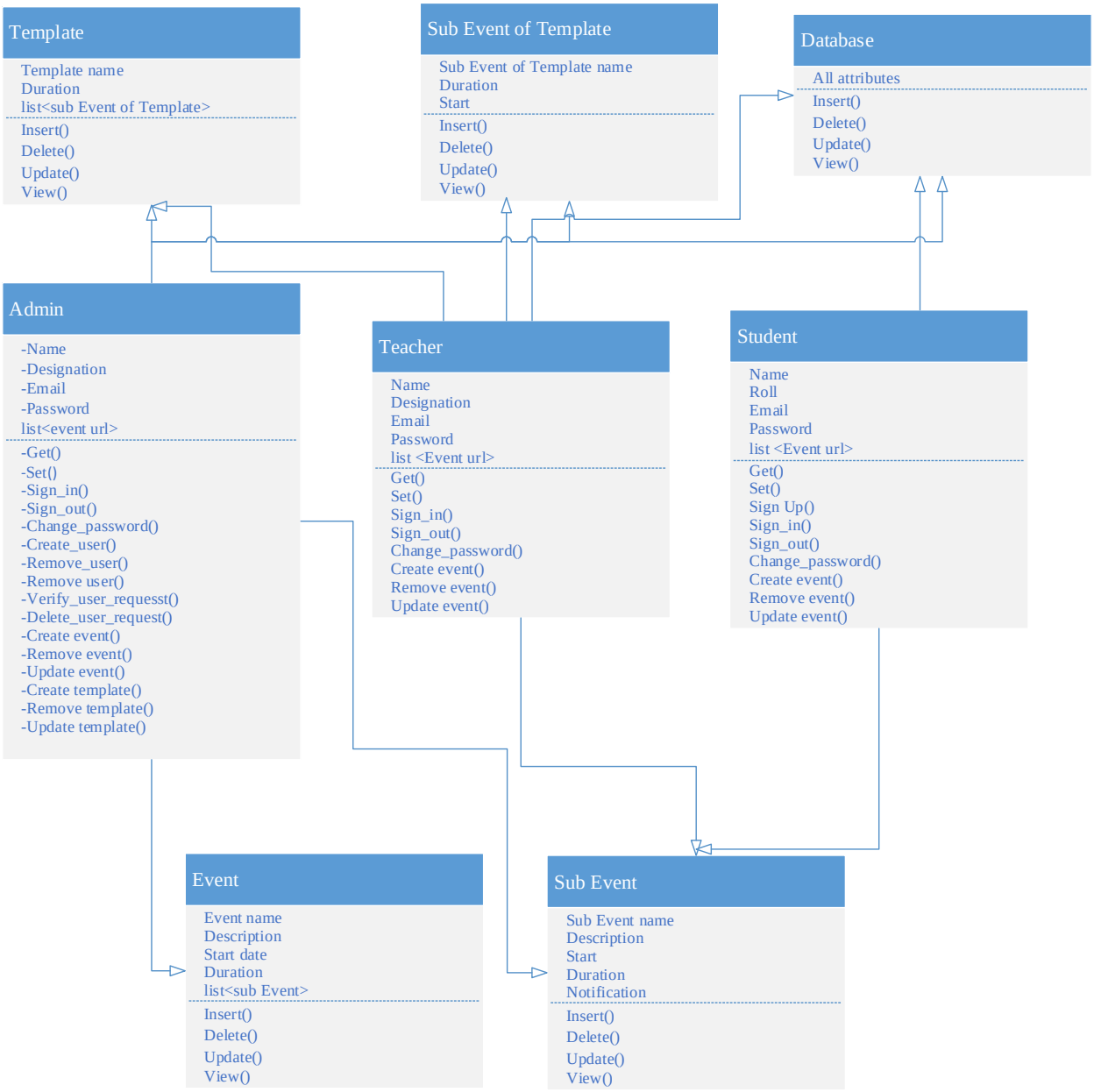


Fig 6.1: CRC diagram