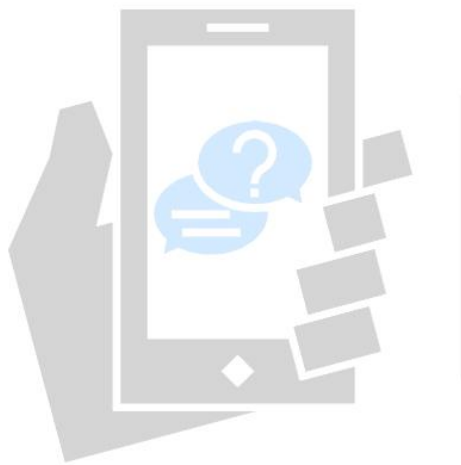


Permission and Request Online System

Domain model and class diagram



PROS Version 3.0

Members:

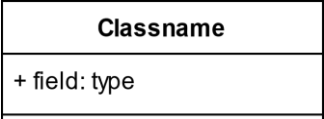



Abhishek Narayan
Advaith N Narayanan
A Anirudh
Digant Mehul Gandhi

Domain Model and Class Diagram

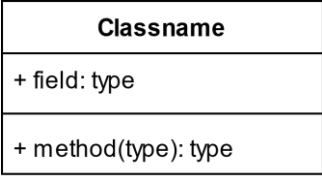

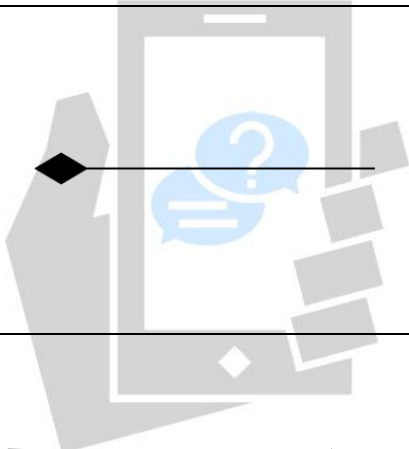



Aim:

To identify the classes and their associations and draw domain model and class diagram for Permission and Requests Online System.

Notations for Domain model:

Notation	Type	Explanation
	Conceptual Class	An object in the problem domain
	Association	Relationship between objects or the classes
	Multiplicity of the Role	Defines how many instances of a class A can be associated with one instance of a class B
	Generalization	The child class inherits the characteristics of base class

Notation for Class diagram:

Notation	Type	Explanation
	Conceptual Class	An object in the problem domain along with its attributes
	Aggregation	It is a relationship between two classes where one class is a part of another where one class is meaningful even without the aggregate
	Composition	It is a relationship between two classes where one class is a part of another where one class is not meaningful without the other
	Generalization	The child class inherits the characteristics of base class
	Association	Relationship between objects or the classes
	Multiplicity of the Role	Defines how many instances of a class A can be associated with one instance of a class B

Identification of Classes:

a) Identification of Conceptual Classes:

Conceptual class category	Conceptual Class
Physical or Tangible object	-
Specifications	1. Student Description 2. Staff Description
Catalogs	Student History
Roles of People	1. Student 2. Staff
Computer systems	Permission and Request System
Events	Requesting

b) Identification of Noun Phrases:

Initial List of Noun Phrases:

- Permission and Request Online System
- Request system
- Student
- Student ID
- Student description
- Rating
- Accepted requests
- Pending request
- Document
- Messages
- Staff
- Admin
- Faculty
- Staff ID
- Staff description
- Accept request
- Deny request
- Login
- Logout
- Signup

- Credentials
- QR code
- Document Type

Final List of Noun Phrases:

1. Permission and Request Online System
2. Student
3. Student Description
4. Rating
5. Accepted Requests
6. Pending Request
7. Documents
8. Messages
9. Staff
10. Staff Description

Identification of Associations:

a) Identification of Association:

Category	Association	Between
<i>A uses B</i>	Used by	System and Student
<i>A is a member of B</i>	Has	System and Staff
<i>A is known/logged/report ed/captured in B</i>	Given to	Rating and Student
<i>A is a description for B</i>	Described by	Student and Student Description, Staff and Staff Description
<i>A is event related to B</i>	Granted	Student and Accepted Requests

<i>A</i> is event related to <i>B</i>	Creates	Student and Pending Request
<i>A</i> manages <i>B</i>	Approves	Staff and Pending Request
<i>A</i> is a logically contained in <i>B</i>	Contains	Pending Request and Documents
<i>A</i> is a transaction related to another transaction <i>B</i>	Incorporates	Pending Request and Messages

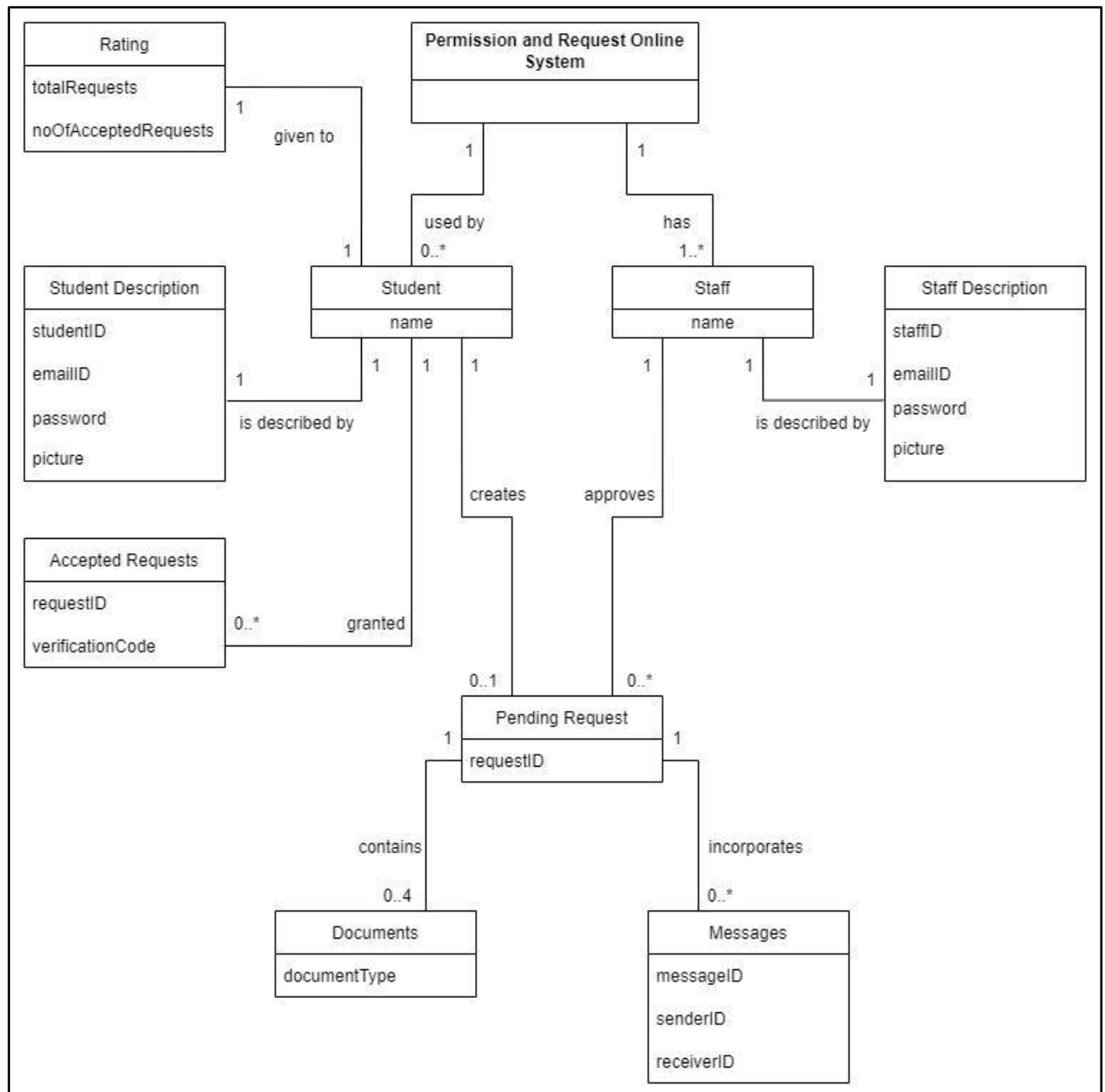
b) Definition of Association:

Association	Explanation
Generalization	The Generalization association ("is a") is the relationship between the base class that is named as "superclass" or "parent" and the specific class that is named as "subclass" or "child"
Aggregation	An aggregation is a relationship between classes which says one class 'is a part of' another class. In aggregation, the part (constituent) is meaningful without the whole (aggregate)
Composition	An aggregation is a relationship between classes which says one class 'is a part of' another class. In composition, the part (component) is not meaningful without the whole (container)

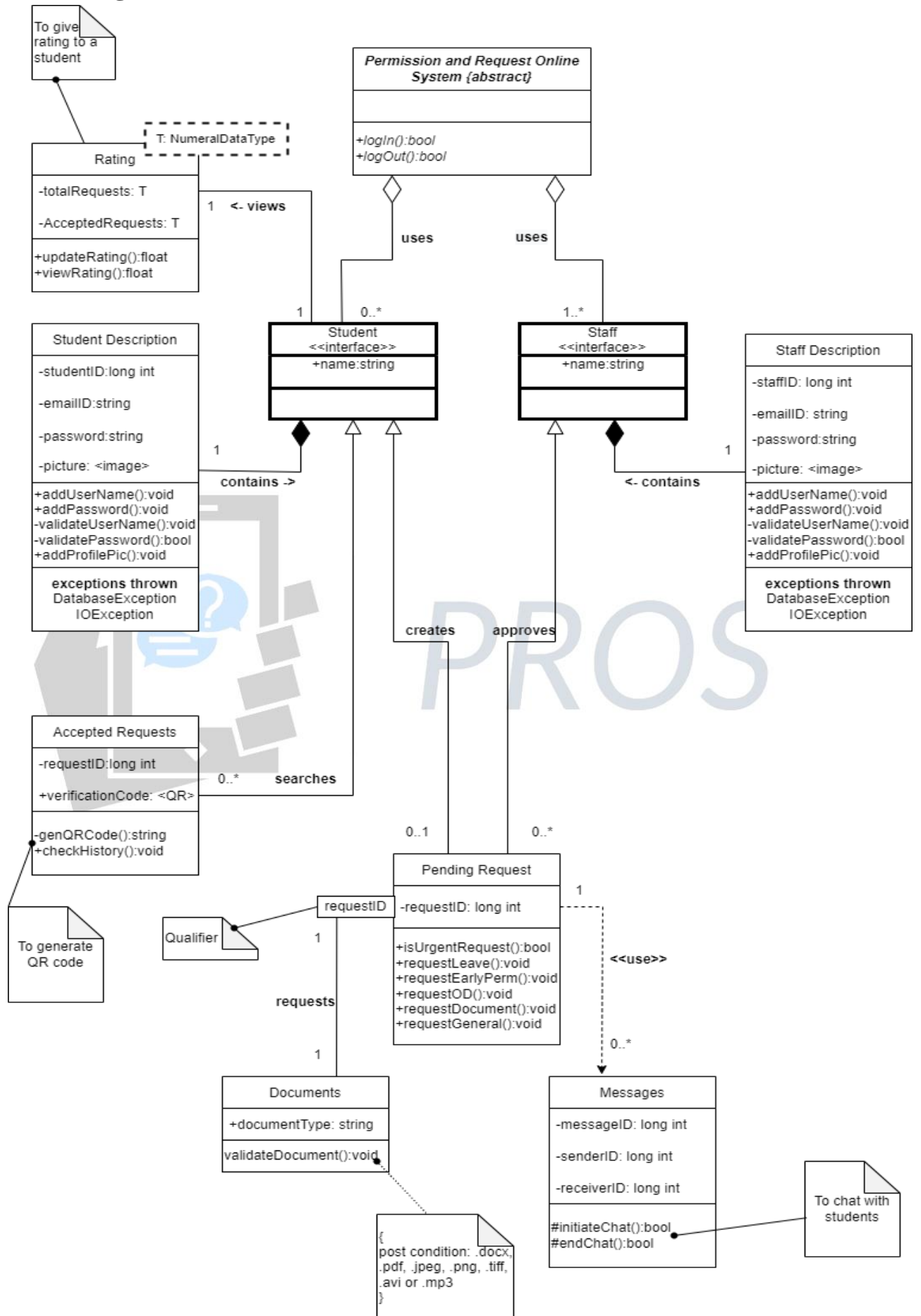
c) Multiplicity:

Relationship	Multiplicity
System-Student	One (1) permission and request system is used by zero or more (0..*) students
System-Staff	One (1) permission and request system has one or more (1..*) staff
Rating-Student	One (1) rating is given to one (1) student
Student-Student Description	One (1) student is described by one (1) student description
Staff-Staff Description	One (1) staff is described by one (1) staff description
Student-Accepted Requests	One (1) student is granted permission for zero or more (0..*) requests
Student-Pending Request	One (1) student creates zero or one (0..1) pending request
Staff-Pending Request	One (1) staff approves zero or more (0..*) pending requests
Pending Request-Documents	One (1) pending request contains zero to four (0..4) associated documents
Pending Request-Messages	One (1) pending request incorporates zero or more (0..*) messages between staff and students

Domain model:



Class Diagram:



Documentation:

Requests can be made by one or more users. Users include students. Users have to enter their details and verify them before making any requests. Users can check their history of requests. Users are also provided with functionality to check their rating as well as make priority requests. Users can also cancel their requests. Each user and their request have a unique identifier. Users must upload a document as proof for making a request. Faculty can approve requests of one or more students. Faculty can initiate chat with the students before approving the request. Accepted requests contain the request ID and the QR code for verification.

