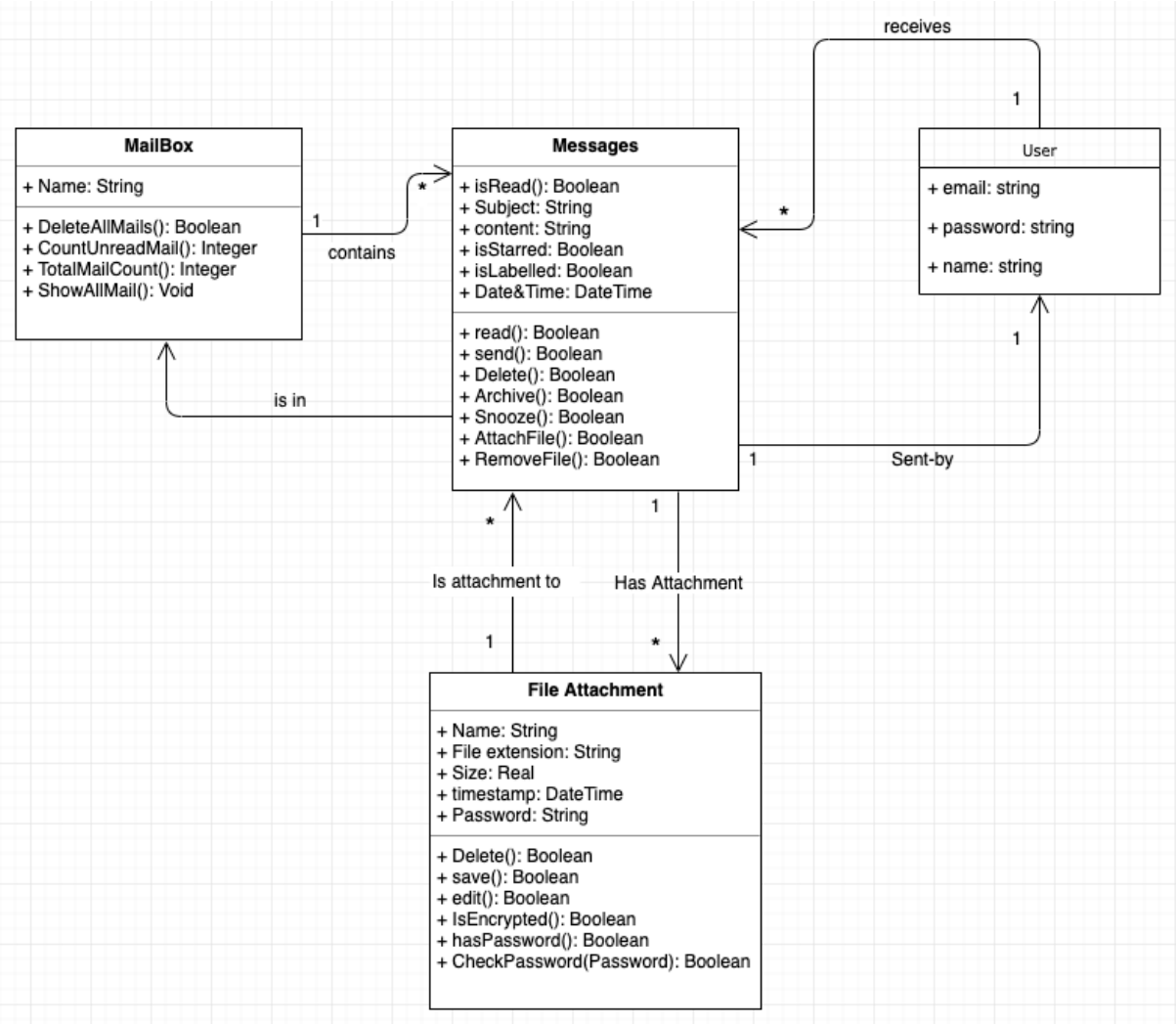
UML Modeling

CS-C3150 Software Engineering

1. Explanation of different terms:

- **Generalization:** This is a technique we use to manage complexity by grouping entities in more general class. We then learn the characteristics of these classes and are saved from learning about every entity individually.
- **Aggregation:** In real-life, the objects are generally composed of many different parts or objects. Aggregation is a special type of association in which objects are composed together to form something bigger and complex objects.
- **Activity Diagram:** Activity diagrams are a type of diagram in UML which can be used to the essentials of a system. It is a representation which shows the workflows activities and actions involved in a process.
- **State Diagram:** State diagram is a type of diagram in UML which is used to represent the reaction of a system to a external and internal stimuli. This type of representation is important since a knowledge of how a system reacts to it's surrounding helps in developed a better system.
- **Design Pattern:** Pattern is a description of a problem and it's solutions in such a way that it can be reused in different settings. It is a method of reusing knowledge and experience and is generally associated with object-oriented design.
- **Host-target Development:** Host-target development is a kind of software development technique in which the software is developed on a host machine but it runs on a target machine. Thus it is important that the software being developed has the capability to run on different machine (hence different platforms).

2. UML Model


receives
1
MailBox
+ Name: String
+ DeleteAllMails(): Boolean
+ CountUnreadMail(): Integer
+ TotalMailCount(): Integer
+ ShowAllMail(): Void
1
contains
*
Messages
+ isRead(): Boolean
+ Subject: String
+ content: String
+ isStarred: Boolean
+ isLabelled: Boolean
+ Date&Time: DateTime
+ read(): Boolean
+ send(): Boolean
+ Delete(): Boolean
+ Archive(): Boolean
+ Snooze(): Boolean
+ AttachFile(): Boolean
+ RemoveFile(): Boolean
*
User
+ email: string
+ password: string
+ name: string
1
is in
1
Sent-by
*
1
Is attachment to
Has Attachment
1
*
File Attachment
+ Name: String
+ File extension: String
+ Size: Real
+ timestamp: DateTime
+ Password: String
+ Delete(): Boolean
+ save(): Boolean
+ edit(): Boolean
+ IsEncrypted(): Boolean
+ hasPassword(): Boolean
+ CheckPassword(Password): Boolean