



**Green University of Bangladesh**  
**Department of Computer Science and Engineering (CSE)**  
**Faculty of Sciences and Engineering**  
**Semester: (Spring, Year: 2021), B.Sc. in CSE (Day)**

**Project Proposal**  
**ON**  
**File Transferring Android Application**  
**Course Title: Software Engineering Lab**  
**Course Code: CSE-314                      Section: 183DA**  
**Student Details**

Name		ID
1.	Badhon Parvej	183002111
2.	Afrin Sufian	183002048
3.	Md. Abdullah Antor	183002126
4.	Minhas Abedin Sohan	183002105
5.	S.M Sherajul Islam	183002077

**Lab Date : 21-06-2021**  
**Submission Date : 28-07-2021**  
**Course Teacher's Name : Dr. Muhammad Aminur Rahaman**

[For Teachers use only: **Don't Write Anything inside this box**]

<b><u>Lab Report Status</u></b>	
<b>Marks:</b>	<b>Signature:</b>
<b>Comments:</b>	<b>Date:</b>

## 1. Introduction

The performance of mobile devices, especially smart phones, has been quickly improve for the last few years. Most users take advantage of highly efficient smart phones, and consume the contents in the smart phones longer time than other devices usage time. As a result, users frequently share the contents and the needs of file sharing via smart phones have been increase considerably. Existing peer-to-peer sharing frequently incurs disconnections and retransmissions. A web hard-based sharing needs to pay expensive cost for using high-volume file servers as well. In order to overcome such problems, we propose an application for seamless file sharing for the Android devices. The seamless service manager and the file manager in the proposed application share files seamlessly by choosing faster and more stable network automatically—one of the Bluetooth and the WIFI. We expect that the proposed application could be a cost effective and reliable solution for file sharing among mobile devices.

In this paper, we concern seamless file sharing on Android based smart phones. Most mobile file sharing is perform either on the peer-to-peer (P2P)-based systems or on the web hard-based systems. The P2P systems suffer from frequent Disconnection and retransmissions due to the nature of mobility of users. The web hard-based systems are quite reliable, but users have to pay for using high-volume file servers.

## 2. Problem Domain

- There are one major reason when we are connect file sharing app then problem frequently disconnects while transferring files between device is it tries to transfer data at height speed which cause instability and disconnection.
- Placing device at larger distance between which you are transferring files can cause signal drop or interruption caused by surrounding Wi-Fi networks.
- When we are open file sharing application then there are showing many advertise.
- File transfer slowing.
- Duplicate of data
- Data redundancy
- It may hang low memory device.
- There are some bugs in this app

### 3. Motivations

- When Open this file transfer application then there are not showing, advertise.
- File transfer firstly any android device to device.
- Do not problem when connect device to device.
- User-interface is very clear.
- The speed of file sharing faster than normal Bluetooth file sharing.
- We can transfer large files between two devices.

### 4. Objectives

There are some major objective that, we are going to focus on are:

- To develop system the file sharing application transfer large file between two devices in sort time.
- When user connect file transfer application for sharing some file then there are no facing connection.

### 5. Proposed Methodology

- The methodology used to develop an application can greatly affect the resulting product. A single run through of development can lead to a product, which does not work correctly or does not cover requirements as expected. Conversely, too much time testing may result in an application, which is not finished.
- However, there are no weaknesses of this methodology, such as clients not having a fixed set of requirements, and issues with integration of components. For this project, an agile process seemed to be best suited to development.
- There are used java programming language and used xml for user interface.

### Android Studio

- To develop a large-scale application, an integrated development environment provides an easier way to manage and create software.
- There are many available, for free or for a fee, each offering different properties. For this project, an IDE aimed at Java would be most suitable. Google offers plugins for Eclipse to enable easier integration for development, debugging and releasing for its Android and App Engine products.
- This IDE is available free on all major platforms, providing easy portability between development hardware.

### Android Virtual Machine

- The Android virtual machine is an Android emulator, which runs on a computer. Once an application is ready to be tested, it can be install on the AVM, which acts almost like an actual hardware device.
- It is limited, as it cannot make phone calls, and is restricted in other services such as Android Market, but it provides a next best alternative to see how an application might run on a real handset and enables developers and testers to interact with the software as a user might.

## 6. Conclusion

We present a File sharing android application which application can be transfer file any android device to device. It can be working first data transfer and free advertisement.

## 7. References

[1] P. Zheng and L. M. Ni, "Spotlight: the rise of the smart phone", IEEE Computer Society, Vol. 7, No. 3; March 2006

[2] Android Developers, "What is Android?," Available:  
<http://developer.android.com/guide/basics/what-is-android.html>

[3] M. Butler, "Android: Changing the mobile landscape", Pervasive Computing, IEEE, Vol. 10, pp. 4–7, March 2011

[4]Architecture of the Secure File System, James P. Hughes, Storage Technology Corporation, jim@network.com, Christopher J. Feist, Storage Technology Corporation chris.feist@network.com.

[5]Enhancement of anticipative recursively adjusting mechanism for redundant parallel file transfer in data grid

**Human Resource Plan**

No.	Responsibilities	Name and Affiliation
1.	Team Lead	Badhon Parvej
2.	Data Collector	Afrin Sufian
3.	Animator	Md. Abdullah antor
4.	Senior Developer	Minhan abedin sohan
5.	Developer	S.M sherajul islam

## Project plan and Scheduling

SL	Task	Required Month	Responsible Person	Phase
1.	Requirement Specification and Data Collection	2	Project Lead, System Designer, Developers, Animators & Data	Research and Planning
2.	Requirement Finalization	1	Project Lead, System Designer & Developers	Analysis
3.	System Design and Modeling	1	System Designer	Design
4.	System Modeling and Finalization	1	Project Lead, System Designer & Developers	Design
5.	System Development (Coding & Animation)	3	System Designer, Animators & Developers	Implementation
6.	Testing and Feedback sharing	1	Project Lead, System Designer & Developers	Testing
7.	Beta Version Delivery for Feedback	1	Research Students, Project Lead, System Designer, Developers,	Testing
8.	Feedback sharing & Requirement Change	1	Project Lead, System Designer, Developers, Animators & Data	Testing
9.	Delivery preparation with documentation	1	Project Lead, System Designer & Developers	Deployment
Total Month Required		12		

## Detailed Budget

SL	Item	Specification	Amount	Unit count	Total
<b>1</b>	<b>Office Cost</b>				
<b>1.1</b>	Team Meeting		<b>500</b>	<b>15</b>	<b>7500</b>
<b>1.2</b>	Project Meeting		<b>1000</b>	<b>10</b>	<b>1000</b>
<b>1.3</b>	Convince	For Senior advisors	<b>1500</b>	<b>2</b>	<b>3000</b>
<b>1.4</b>	First Aid		<b>100</b>	<b>20</b>	<b>2000</b>
					<b>13500</b>
<b>2</b>	<b>Office Stationary</b>				
<b>2.1</b>	Printing		<b>1000</b>	<b>20</b>	<b>20000</b>
<b>2.2</b>	Maintenance		<b>500</b>	<b>3</b>	<b>1500</b>
					<b>21500</b>
<b>3</b>	<b>Office Equipment</b>				
<b>3.1</b>	Computer Purchase	For animation	<b>100000</b>	<b>1</b>	<b>100000</b>
<b>3.2</b>	Laptop Purchase	For data collection	<b>50000</b>	<b>1</b>	<b>500000</b>
<b>3.3</b>	DSLR Camera	For data collection	<b>50000</b>	<b>1</b>	<b>500000</b>
<b>3.4</b>	Scanner	Scanner	<b>15000</b>	<b>1</b>	<b>15000</b>
<b>3.5</b>	Printer	printer	<b>25000</b>	<b>1</b>	<b>25000</b>
					<b>240000</b>
<b>4</b>	<b>Salary</b>				
<b>4.1</b>	Team Lead	One-time	<b>100000</b>	<b>1</b>	<b>100000</b>
<b>4.2</b>	System Designer	One-time	<b>70000</b>	<b>1</b>	<b>70000</b>
<b>4.3</b>	Software Engineer	One-time	<b>70000</b>	<b>1</b>	<b>70000</b>
<b>4.4</b>	Data Collector	One-time	<b>50000</b>	<b>1</b>	<b>50000</b>
<b>4.5</b>	Animator	Monthly salary	<b>50000</b>	<b>1</b>	<b>50000</b>
<b>4.6</b>	Senior Developer	Monthly salary	<b>30000</b>	<b>2</b>	<b>60000</b>
<b>4.7</b>	Developer	Monthly salary	<b>20000</b>	<b>2</b>	<b>40000</b>
					<b>440000</b>
<b>Grand Total</b>					<b>715000</b>



**Green University of Bangladesh**  
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**LAB REPORT NO 02**  
**Course Title: Software Engineering Lab**  
**Course Code: CSE-314                      Section: 183DA**  
**Lab Experiment Name: Software Requirement Specification**

**Student Details**

Name		ID
1.	Badhon Parvej	183002111
2.	Afrin Sufian	183002048
3.	Md. Abdullah Antor	183002126
4.	Minhas Abedin Sohan	183002105
5.	S.M Sherajul Islam	183002077

**Lab Date : 28-06-2021**  
**Submission Date : 04-07-2021**  
**Course Teacher's Name : Dr. Muhammad Aminur Rahaman**

[For Teachers use only: **Don't Write Anything inside this box**]

<b><u>Lab Report Status</u></b>	
<b>Marks:</b>	<b>Signature:</b>
<b>Comments:</b>	<b>Date:</b>

Name		ID	Responsibility
1.	Badhon Parvej	183002111	Team Lead, Methodology, Implement, Co-operate
2.	Afrin Sufian	183002048	Objective, Summery, Discussion and conclusion Co-operate
3.	Md. Abdullah Antor	183002126	Objective
4.	Minhas Abedin Sohan	183002105	summary
5.	S.M Sherajul Islam	183002077	Discussion and Conclusion

Name		ID	Responsibility	Punctuality	Contribute	Co-operate	Meeting attend	Average
1.	Afrin Sufian	183002048	4.5	4.5	4.5	4	5	4.5
2.	Md. Abdullah Antor	183002126	4	4	4	4	3	3.8
3.	Minhas Abedin Sohan	183002105	4	4	4	4	3	3.8
4.	S.M Sherajul Islam	183002077	4	4	4	4	3	3.8



## 1. Title of the lab experiment

Software Requirement Specification

## 2. Objectives

- Software requirements specification is the basis for our entire project. It lays the framework that every team involved in development will follow.
- It is use to provide critical information to multiple teams, development, quality assurance, operations, and maintenance. This keeps everyone on the same page.

## 3. Methodology

### 1. Pseudocode

- We are use java programming for develop file transfer application.
- XML use for User Interface.

### 2. Method

#### We are solving some problem

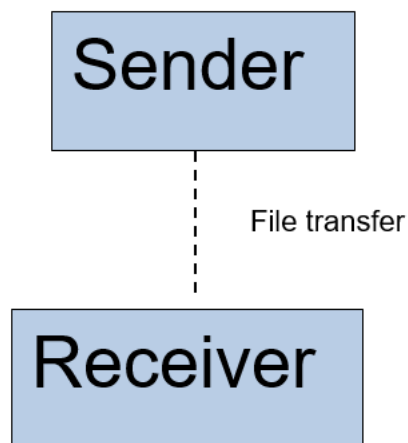
1. Solving File transfer slowing problem
2. Solving Data Redundancy problem
3. Solving Duplicate data problem
4. Solving low memory device
5. Advertisement off
6. Large file share between two devices with sort time
7. Solving Non-functionally problem
8. Make a database for stored software history
9. Connection a crystal Reporter

**Configure these settings on both devices for File transfer app to work properly:**

- Both devices have file transfer app installed and running during transfer.
- Select different roles as sender and receiver.
- Make sure the wireless radios are open.
- Set a confirmation request before receiving files.

- Ensure that a Wi-Fi card is install on your device.
- This application can handle most user's file sharing needs.
- When need file transfer open this app and select send file and then drag and drop files. Now search nearby receiver user and pops up file.
- When sender sent file, the receiver accepts files.
- This app using Wi-Fi technology.

#### 4. IMPLEMENTATION



- If we to design, a software then need know that, what is system and user requirement for our software?
- At first we are try to collect all information about our software requirement specification.
- Before design, a software need know about Software requirement specification for our software.
- If we know that which requirement need our software so we can make a high quality software.

#### 5. Discussion and Conclusion

- We want to make a high quality file transfer android software. Firstly, we do not know which requirement need our software for as a user.
- We are analysis all related software which requirement is used their software and then select some important requirement.

- Systems features and system requirement trouble spot. Because we are beginner and we do not know that which programming language use for our software.
- Programming language selection part.
- User requirement and Non-functional requirement is very interesting part.
- We are learn how to analysis software requirement when we are make a good software and how to found it.
- Some software can be related software and there are many information.
- In future if we are make this software so, we are try to update connection distance and then it is possible to file transfer using internet in long distance.

## **6. SUMMARY:**

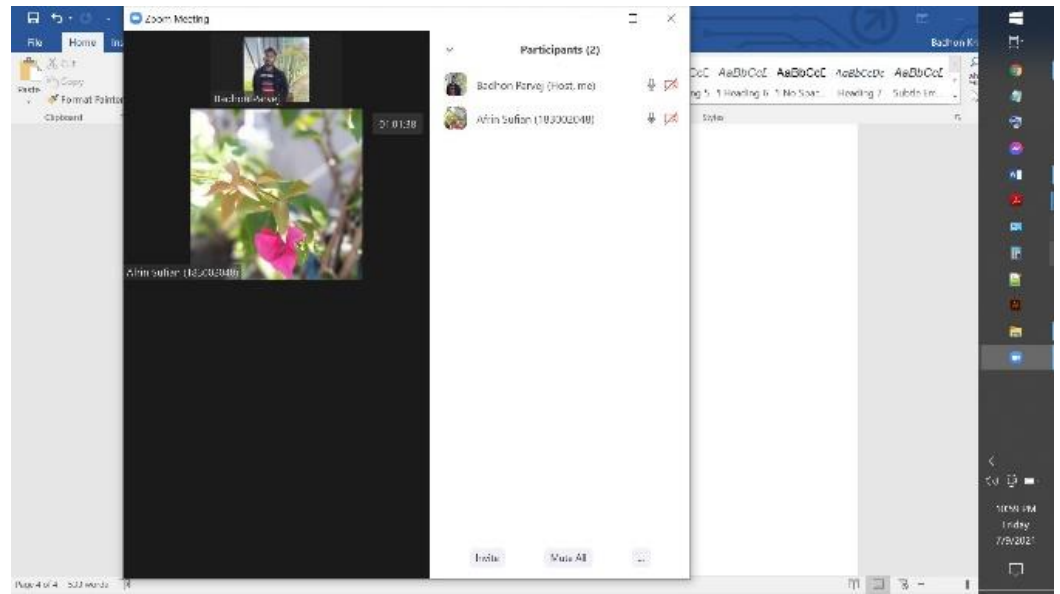
- Software requirements specification is most important when are want to create a software.
- If we know all requirement specification so, we can easily make a High quality software.
- There are most important requirement is a user requirement.

## **Team Evaluation**

### **Daily lab work and lab report**

- Daily lab work time present all member in zoom meeting and we are discuss and analysis.
- This is first daily work so I forget take a screen shot daily work time.
- Minhas abedin sohan are sick.
- Md. Abdullah antor are going to home so he cannot active in this week.
- S.M serajul islam some contribute but not attend in meeting in this week.

### **Meeting time for lab report**





Name		ID	Responsibility
1.	Badhon Parvej	183002111	Team Lead, Methodology, Implement, Summary, Co-operate
2.	Afrin Sufian	183002048	DFD making tools, Objective, Analysis, Summery, Analysis and Discussion Co-operate
3.	Md. Abdullah Antor	183002126	Analysis and Discussion,
4.	Minhas Abedin Sohan	183002105	Problem Analysis
5.	S.M Sherajul Islam	183002077	Objectives

Name		ID	Responsibility	Punctuality	Contribute	Co-operate	Meeting attend	Average
1.	Afrin Sufian	183002048	4.5	4	4.5	4	5	4.4
2.	Md. Abdullah Antor	183002126	4	4	3.5	4	3	3.7
3.	Minhas Abedin Sohan	183002105	4	4	3.5	4	3	3.7
4.	S.M Sherajul Islam	183002077	4	4	3.5	4	3	3.7

## 1. Title of the lab Experiment

Draw 0 level and 1 level DFD Diagram for our project

## 2. Objectives

- Data flow diagram helps us to understand the functioning and the limits of a system
- It is a graphical representation of our project system, which is very easy to understand as it helps visualize contents.

## 3. Problem Analysis

Data flow diagram is graphical representation of flow of data in an information system. It is capable of depicting incoming data flow, outgoing data flow and stored data. The DFD does not mention anything about how data flows through the system. It is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes the information, where data is stored. The flowchart depicts flow of control in program modules. DFDs depict flow of data in the system at various levels. DFD does not contain any control or branch elements.

## 4. Methodology

### 5. Component of DFD:

We are using Yourdon and Coad symbols and notation in DFD for our project diagram.

There are four components.

#### 1. External entity

- This external entity means user who send or receives data from our project.

#### 2. Process

- This is main process for our project there going all user input and output. There change input to output all user input data.

#### 3. Data store

- Our Project data or file hold in data store. It we can use later.

#### 4. Data flow

- The route that data takes between the external entities, process and data stores.



## 6. Level of DFD

The DFD may be used to perform a system or software at any level of abstraction. In fact, DFDs may be partitioned into levels that represent increasing information flow and functional detail. Levels in DFD are numbered 0, 1, 2 or beyond.

- **Level 0:** Highest abstraction level DFD is known as Level 0 DFD, which depicts the entire information system as one diagram concealing all the underlying details. It is also known as fundamental system model, or context diagram represents the entire software requirement as a single bubble with input and output data denoted by incoming and outgoing arrows.
- **Level 1:** In Level 1 DFD, a context diagram is decomposed into multiple bubbles/processes. In this level, we highlight the main objectives of the system and breakdown the high-level process of 0-level DFD into sub processes.
- **Level 2:** At this level, DFD shows how data flows inside the modules mentioned in Level 1. Higher level DFDs can be transformed into more specific lower level DFDs with deeper level of understanding unless the desired level of specification is achieved.

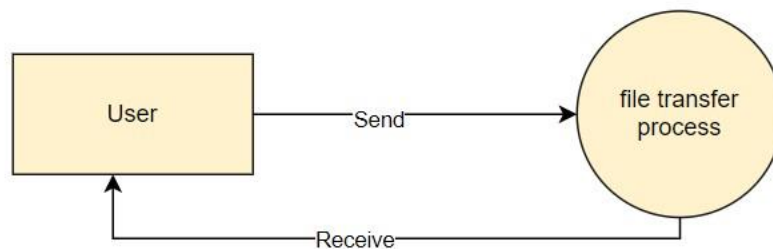


## 7. DFD Rules and Tips:

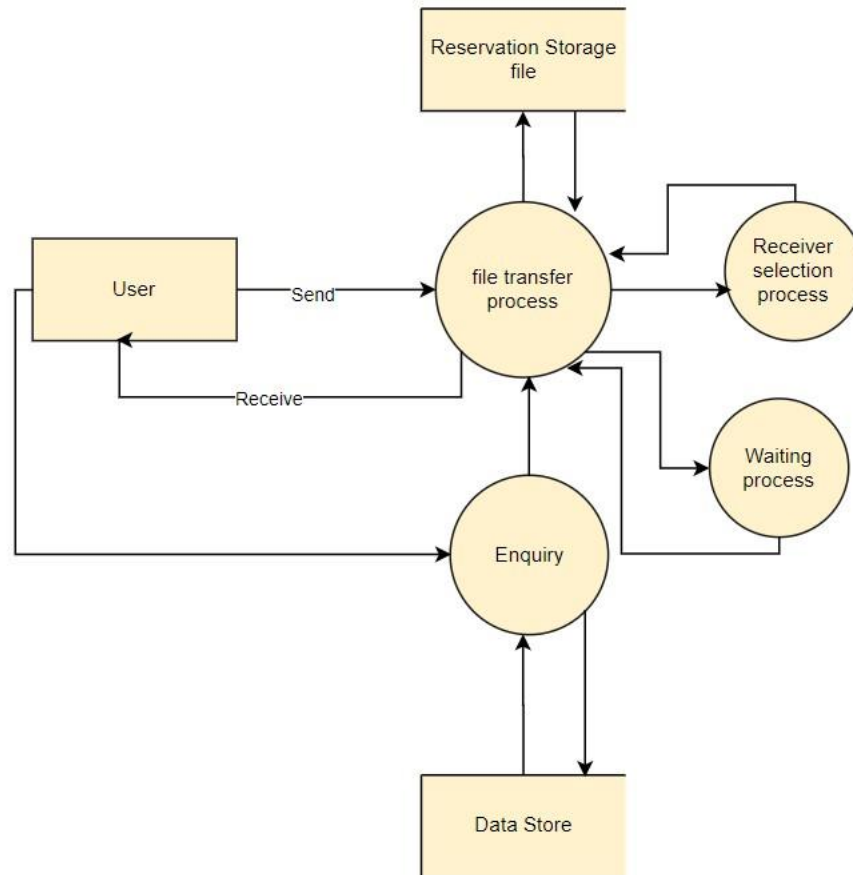
One of the rule for developing DFD is that all flow must begin with and end at a processing step. This is quite logical, because data cannot transform on its own with being process. By using the thumb rule, it is quite easily to identify the illegal data flows and correct them in a DFD.

- Each process should have at least one input and an output.
- Each data store should have at least one data flow in and one data flow out.
- Data stored in a system must go through a process.
- All processes in a DFD go to another process or a data store.
- An entity cannot provide data to another entity without some processing occurred.
- Data cannot move directly from an entity to a data story without being processed.
- Data cannot move directly from a data store without being processed.
- Data cannot move directly from one data store to another without being processed.

## 5. IMPLEMENTATION



DFD level 0



DFD Level 1

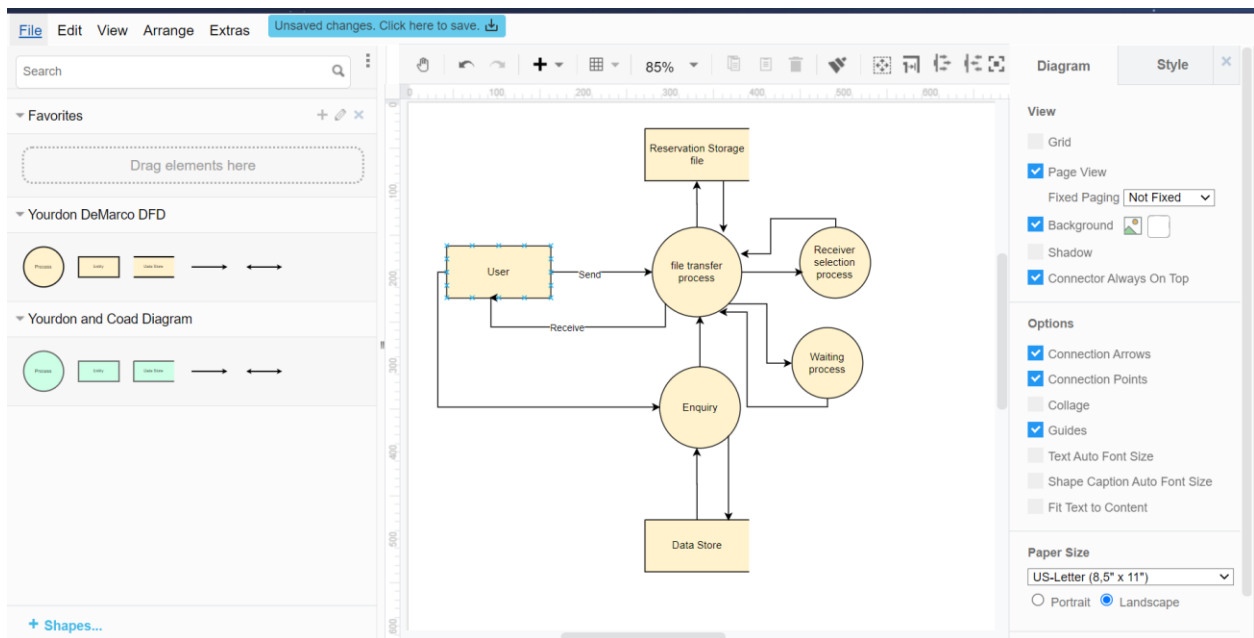
- When we are design, our software then need a system diagram and other related software system. So we are used DFD for design a system our project.
- This method is very clear and help full for design a system in any project. We are design how to input as a user and how to get output.
- There are most important part user input/output, process and date store system in DFD for our project.
- This part most is most important for our project because it is helps us to know about our software system.

## 6. DFD Making tools:

We are using online visual paradigm tools for making a DFD diagram.

This is website:

<https://online.visual-paradigm.com/>



### 1. Describe your tests

- We are get a software system diagram from DFD level 0 and DFD level 1.

### 2. Summarize your results, possibly in graphical form

- We have two diagram our software system from DFD level 0 and DFD level 1.
- Now we can easily make our software cause we know that our software system.
- 

### 3. Argue that they cover all types of program behavior

- This DFD level cover all of types of program behavior. We can easily define and make a diagram any software system.

### 4. This should also include a description of any program bugs that is, tests which have incorrect results

- When we are make, our software system diagram then there is no admin or server side in DFD level 0 and DFD level 1.

## 7. ANALYSIS AND DISCUSSION

- We are properly design our software system that can be help to make our software.
- We think when make a software before make a software system diagram using DFD level 0 and DEF level 1.
- There is a main problem how to draw DFD diagram. Firstly, we do not understand that how to draw it.

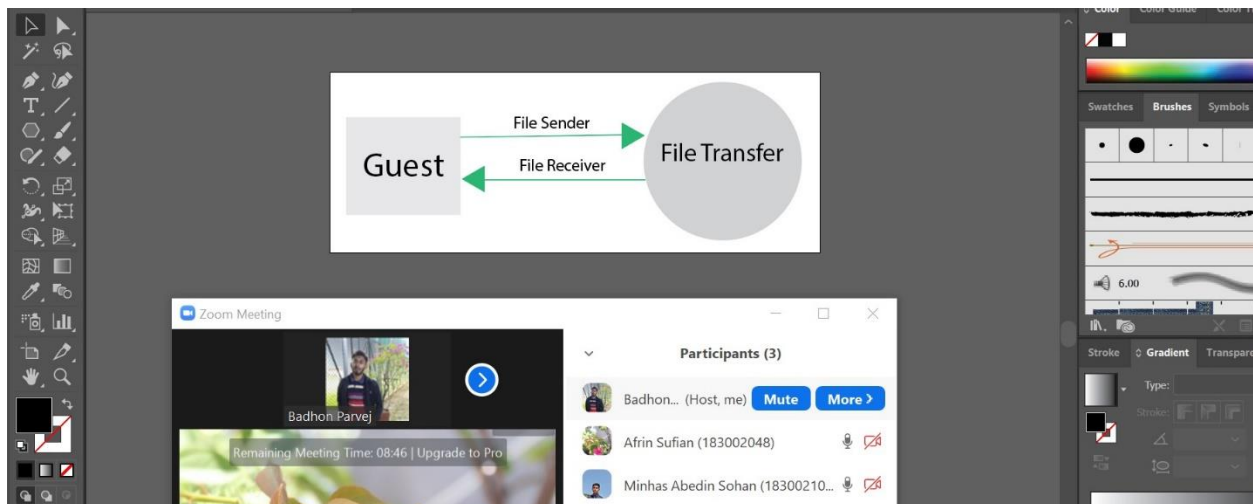
- In this part, we learn how to draw DFD level 0 and level 1. Now we can easily draw any software system diagram using DFD level 0 and DFD level 1.
- There is a main part of graphical representation software system.
- DFD is the abbreviation for Data Flow Diagram. The flow of data of a system or a process is represent by DFD our project.
- It also gives insight into the inputs and outputs of each entity and the process itself. DFD does not have control flow and no loops or decision rules are present. Specific operations depending on the type of data can be explain by a flowchart.
- Data Flow Diagram can be represent in several ways. The DFD belongs to structured-analysis modeling tools.

## Team Evaluation

### Daily lab Work and Lab report

- Daily lab work time present only Afrin Sufian and Minhas abedin sohan.
- Md. Abdullah antor are going to home so he cannot active in this week.
- S.M serajul islam some but meeting is not attend contribute in this week.

### Daily work time



### Lab report time





Name		ID	Responsibility
1.	Badhon Parvej	183002111	Team Lead, Co-operate, Methodology
2.	Afrin Sufian	183002048	Objective, Test Result, Summery, Co-operate
3.	Md. Abdullah Antor	183002126	Test result, Analysis and Discussion, Co-operate
4.	Minhas Abedin Sohan	183002105	Implementation
5.	S.M Sherajul Islam	183002077	Analysis and Discussion

Name		ID	Responsibility	Punctuality	Contribute	Co-operate	Meeting attend	Average
1.	Afrin Sufian	183002048	5	4	5	4	5	4.6
2.	Md. Abdullah Antor	183002126	4	4	4	4	5	4.2
3.	Minhas Abedin Sohan	183002105	4	4	3.5	3.5	5	4
4.	S.M Sherajul Islam	183002077	4	4	4	3	5	4

## 1. TITLE OF THE LAB EXPERIMENT

Draw a Use-case for our project

## 2. OBJECTIVES

- To capture a system behavioral modelling and representation in diagram and frequently used to analyze various systems.
- 

## 3. PROCEDURE

**Method:**

**Use-case diagram components:**

- **Actors:** The users that interact with a system. An actor can be a person, an organization, or an outside system that interacts with your application or system.
  - Actor will initiate use-cases directly.
  - Actor will benefited directly.
  - Actor will connected directly.
- **System:** A specific sequence of actions and interactions between actors and the system.



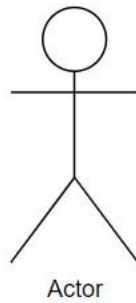
System

- **Goals:** The end result of most use cases. A successful diagram should describe the activities and variants used to reach the goal.

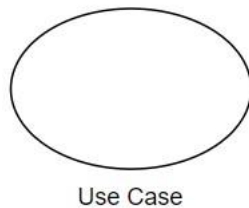
**Use Case Diagram symbols and notation:**

- **Actors:** Stick figures that represent the people actually employing the use cases.





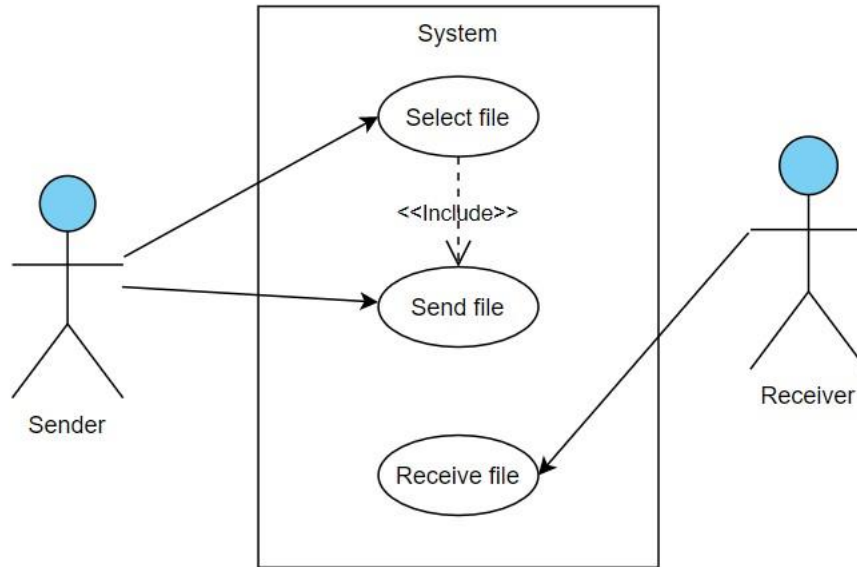
- **Use cases:** Horizontally shaped ovals that represent the different uses that a user might have.



- **Associations:** A line between actors and use cases. In complex diagrams, it is important to know which actors are associated with which use cases.



## 4. IMPLEMENTATION



## 5. TEST RESULT

- We design a Use-case model diagram for our project.
- We get two types of user that is Sender and Receiver they called Actor.
- We know all of the user requirements using Use-case for our project.
- Understand more logically the software system for our project.

## 6. ANALYSIS AND DISCUSSION

After making the use case diagram, we the members of our group has find out some things by this experiment:

- We see the basic structure and connection of use case diagram for our software.
- Understand more logically how this software works from the figure
- Gives an overview of the distinct ways the user interacts with a system to achieve the goal.
- Helps to identify the requirement for a software system in an easier way.

## 7. SUMMARY:

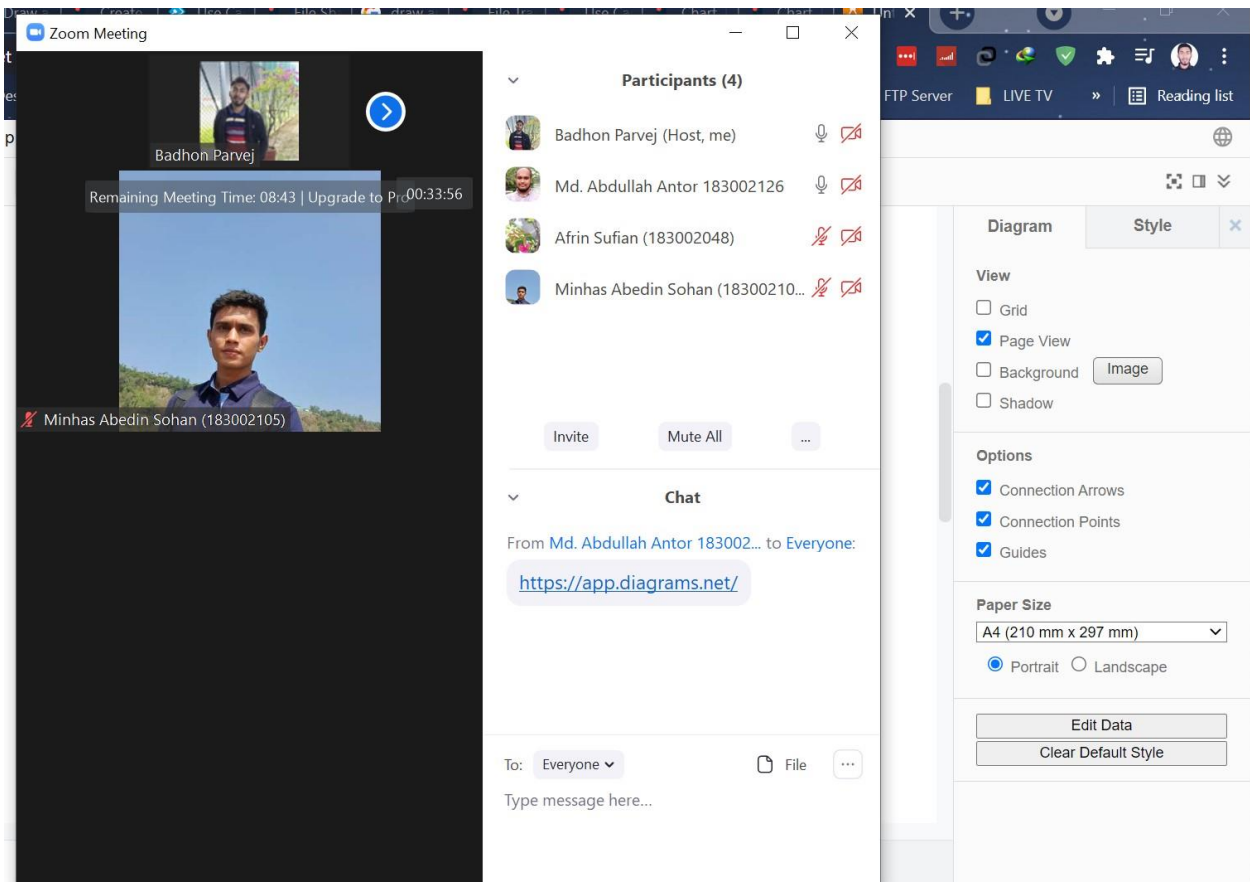
Use case diagrams consists of actors, use cases and their relationships. The diagram is use to model the system of an application.

## Team Evaluation

### Daily lab Work and Lab report

- Daily lab work meeting time present Afrin Sufian, Minhas abedin sohan, Md. Abdullah Antor

### Daily work time



### Lab report time

Lab Report 3-183002111,183002048,183002105,183002126,183002077 - Word (Product Activation Failed)

Design Layout References Mailings Review View Add-ins Tell me what you want to do... Badhon Kh

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¶ Heading 1 ¶ Heading 2 ¶ Heading 4 ¶ Heading

Participants (2)

Badhon Parvej (Host, me)

Afrin Sufian (183002048)

Invite Mute All



**Green University of Bangladesh**  
**Department of Computer Science and Engineering (CSE)**  
**Faculty of Sciences and Engineering**  
**Semester: (Spring, Year: 2021), B.Sc. in CSE (Day)**

**LAB REPORT NO 04**  
**Course Title: Software Engineering Lab**  
**Course Code: CSE-314 Section: 183DA**

**Lab Experiment Name: Draw a Use-case diagram for our Project.**

**Student Details**

You are screen sharing 02:58:33 Stop Share



**Green University of Bangladesh**  
**Department of Computer Science and Engineering (CSE)**  
**Faculty of Sciences and Engineering**  
**Semester: (Spring, Year: 2021), B.Sc. in CSE (Day)**

**LAB REPORT NO 06**

**Course Title: Software Engineering Lab**

**Course Code: CSE-314**

**Section: 183DA**

**Lab Experiment Name: Draw Sequence and Communication Diagram for our project.**

**Student Details**

	<b>Name</b>	<b>ID</b>
<b>1.</b>	Badhon Parvej	183002111
<b>2.</b>	Afrin Sufian	183002048
<b>3.</b>	Md. Abdullah Antor	183002126
<b>4.</b>	Minhas Abedin Sohan	183002105
<b>5.</b>	S.M Sherajul Islam	183002077

**Lab Date : 26-07-2021**

**Submission Date : 14-08-2021**

**Course Teacher's Name : Dr. Muhammad Aminur Rahaman**

[For Teachers use only: **Don't Write Anything inside this box**]

<b><u>Lab Report Status</u></b>	
<b>Marks:</b>	<b>Signature:</b>
<b>Comments:</b>	<b>Date:</b>

Name		ID	Responsibility
1.	Badhon Parvej	183002111	Team Lead, Methodology, Implement, Co-operate
2.	Afrin Sufian	183002048	Discussion & Conclusion, Co-operate
3.	Md. Abdullah Antor	183002126	Problem Analysis
4.	Minhas Abedin Sohan	183002105	Problem Analysis
5.	S.M Sherajul Islam	183002077	Objective

Name		ID	Responsibility	Punctuality	Contribute	Co-operate	Meeting attend	Average
1.	Afrin Sufian	183002048	4.5	4	5	5	5	4.7
2.	Md. Abdullah Antor	183002126	4	3.5	4	4	5	4.1
3.	Minhas Abedin Sohan	183002105	4	4	3	3	5	3.8
4.	S.M Sherajul Islam	183002077	4	3.5	3	3	5	3.7

## 1. Title of the lab experiment

Draw Sequence and communication Diagram for our project

## 2. Objectives

Understand that the interaction between object that are represented as lifeline in a sequential order of a project using sequence diagram.

### 2.1 Sub-Objectives:

- To show about system behavior.
- To describe the static view of the system.
- To describe the functionalities performed by the system.
- To detect errors and omissions early in the life cycle.

## 3. Problem analysis

The Unified Modeling Language (UML) is a diagram that illustrates the sequence of messages between objects in an interaction. It consists of a group of objects that are represent by lifelines, and the messages that they exchange over time during the interaction.

A Communication diagram is a diagram that shows the interactions between elements at run-time in much the same manner. However, Communication diagrams have used to visualize inter-object relationships, while Sequence diagrams are more effective at visualizing processing over time.

**Problem statement and motivation for the given project:** A mobile app in all about interaction. Without good interaction ability, an app never gets popularity. To create an app firstly we need to visualize all its interaction system so that we do not face any problem while coding or making the documentation. That is why UML diagram and Communication diagrams are need to create proper blueprint.

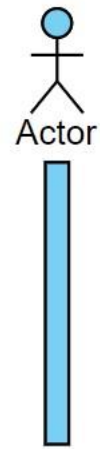
## 4. Procedure

### Method:

### Sequence and communication diagram symbols and notation:

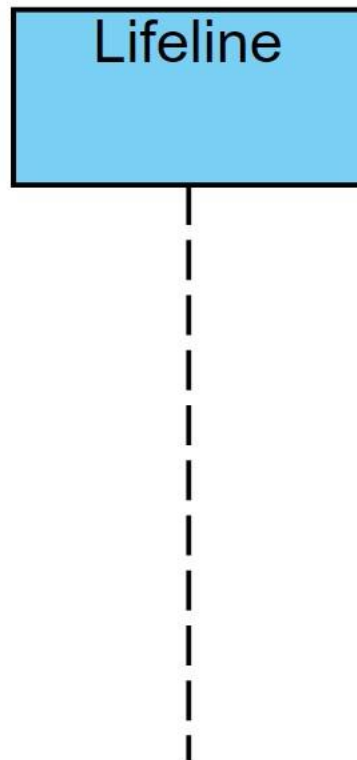
#### ➤ Actors and Activation box:

The Actor show entities that interact with or are external to the system. The activation box represents the time needed for an object to complete a task.



➤ **Lifeline:**

Lifeline represents the passage of time as it extends downward and vertical line shows the sequential events that occur to an object during the charted process.



➤ **Object or note:**

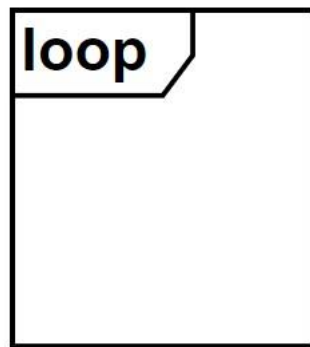
This symbol represents a class or object and object will behave in the context of the system.





➤ **Option loop symbol:**

Uses to model if/then scenarios a circumstance that will only occur under certain conditions.



**Common message Symbol:**

➤ **Synchronous message symbol:**

It has represented by a solid line with a solid arrowhead and used for a sender when wait for a response to a message before it continues.



➤ **Asynchronous message symbol:**

A solid line with a lined arrowhead represents it. Asynchronous messages do not require a response before the sender continues.



➤ **Asynchronous return message symbol:**

This symbol represented by a dashed line with a lined arrowhead.



➤ **Asynchronous create message symbol:**

This symbol represented by a dashed line with a lined arrowhead and creates message by a new object.



➤ **Reply message symbol:**

This symbol represented by a dashed line with a lined arrowhead, these messages are replies to calls.

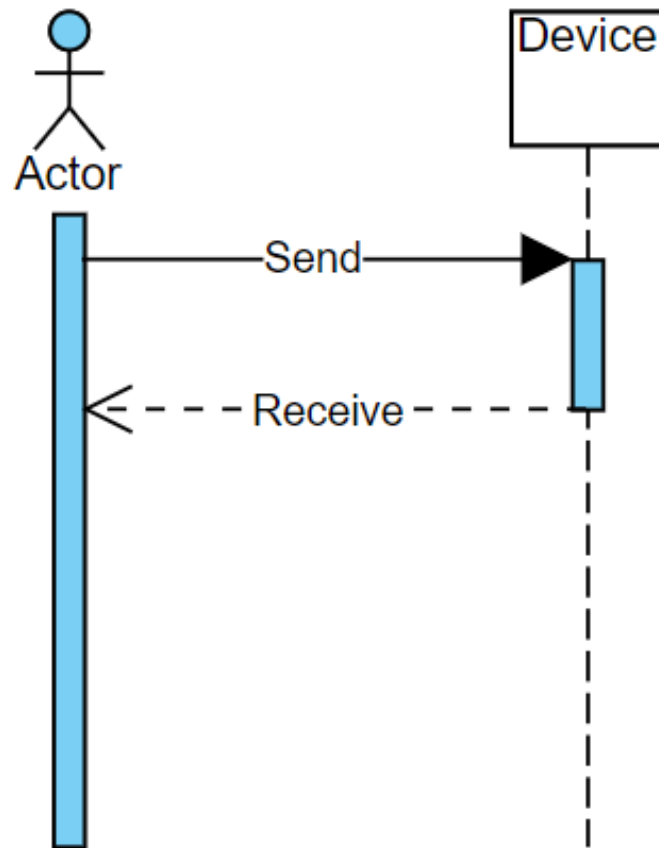


➤ **Delete message symbol:**

This symbol represented by a solid line with a solid arrowhead, followed by an X. This message destroys an object.



## 5. Implementation



## 6. Discussion & Conclusion

From the above Sequence diagrams & communication diagram, we can say that they are useful for businesses and other organizations. Their benefits are--

- A sequence diagram emphasizes the time and order of events where a communication diagram emphasizes the messages exchanged between objects in an application.
- Sequence diagram represents the details of a UML use case.
- Both sequence and communication diagram model is the logic of a sophisticated procedure, function, or operation.
- Communication diagram also visualize the consequences of specific interactions between various components in a process.
- Sequence diagram see how objects and components interact with each other to complete a process.
- Both plans and understands the detailed functionality of an existing or future scenario.

## Team Evaluation

### Daily lab Work and Lab report

#### Daily work time

A screenshot of a Zoom meeting grid during 'Daily work time'. The grid shows four participants in a 2x2 layout. The top-left participant is Md. Abdullah Antor (183002126), a man with a beard wearing a light purple shirt. The top-right participant is Badhon Parvej, a man with a beard wearing a dark jacket over a red and white striped shirt. The bottom-left participant is Afrin Sufian (183002048), a woman with long dark hair wearing a pink and white patterned dress. The bottom-right participant is Badhon Parvej, the same man as in the top-right. Each video tile has a name label at the bottom and a 'Mute' button in the top right corner. The background of the tiles is black.

- Badhon Parvej (Host, me)  
- Afrin Sufian (183002048)  
- Md. Abdullah Antor 183002126  

- Badhon Parvej (Host, me)  
- Md. Abdullah Antor 183002126  
- Minhas Abedin Sohan (183002105)  
- S. M. Sherajul islam (183002077)  

#### Lab report time

01:37:11

View

Remaining Meeting Time: 05:30 | Upgrade to Pro

Afrin Sufian (183002048)

Mute

Badhon Parvej

Mute

S. M. Sherajul islam (183002077)

Minhas Abedin Sohan (183002105)

Mute

Start Video

Security

Participants 4

Chat

Share Screen

Reactions

Apps

More

End

Participants (4)

Badhon Parvej (Host, me)

Afrin Sufian (183002048)

Minhas Abedin Sohan (183002105)

S. M. Sherajul islam (183002077)

Invite

Mute All

01:08:17

Afrin Sufian (183002048)

Badhon Parvej

Md. Abdullah Antor 183002126

Participants (3)

Badhon Parvej (Host, me)

Afrin Sufian (183002048)

Md. Abdullah Antor 183002126

Invite

Mute All



**Green University of Bangladesh**  
**Department of Computer Science and Engineering (CSE)**

**Faculty of Sciences and Engineering**  
**Semester: (Spring, Year: 2021), B.Sc. in CSE (Day)**

**LAB REPORT NO 03(07)**  
**Course Title: Software Engineering Lab**  
**Course Code: CSE-314                      Section: 183DA**

**Lab Experiment Name: SDLC Model selection for our Project.**

**Student Details**

	<b>Name</b>	<b>ID</b>
<b>1.</b>	Badhon Parvej	183002111
<b>2.</b>	Afrin Sufian	183002048
<b>3.</b>	Md. Abdullah Antor	183002126
<b>4.</b>	Minhas Abedin Sohan	183002105
<b>5.</b>	S.M Sherajul Islam	183002077

**Lab Date : 09-08-2021**  
**Submission Date : 14-08-2021**  
**Course Teacher's Name : Dr. Muhammad Aminur Rahaman**

**[For Teachers use only: Don't Write Anything inside this box]**

<b><u>Lab Report Status</u></b>	
<b>Marks:</b>	<b>Signature:</b>
<b>Comments:</b>	<b>Date:</b>

Name		ID	Responsibility
1.	Badhon Parvej	183002111	Team Lead, SDLC Model, Implement, Co-operate
2.	Afrin Sufian	183002048	Methodology, Co-operate
3.	Md. Abdullah Antor	183002126	Discussion & Conclusion
4.	Minhas Abedin Sohan	183002105	Problem analysis
5.	S.M Sherajul Islam	183002077	Objectives

Name		ID	Responsibility	Punctuality	Contribute	Co-operate	Meeting attend	Average
1.	Afrin Sufian	183002048	4.5	4	4.5	4.5	5	4.5
2.	Md. Abdullah Antor	183002126	4	4	4	3.5	5	4.1
3.	Minhas Abedin Sohan	183002105	4	4	4	3	5	4
4.	S.M Sherajul Islam	183002077	4	4	3.5	3	5	3.9

## **1. Title of the lab experiment**

SDLC model selection for our project

## **2. Problem analysis**

- Our task is to develop a file transfer app. This app will allow people to send and receive data wirelessly from one phone to another. It will have good user interface, flexible user interaction system and the robust processing system.
- As days passing, the technologies are getting more and more modernized in every field. The smartphone industries are a great example of it. Nowadays you can do things with your phone, which you could not even imagine 15 years ago. Almost everybody uses a smartphone. People stores many data inside a smartphone.
- That is why it is very important to build a software, which will decrease the hassle of transferring large data over smartphone. Our goal is to make a suitable software, which will be so flexible and efficient that it will save a lot of time of the users.
- However, to develop a good software firstly, we need to select a suitable Software Development Life Cycle (SDLC) model. The success of the software mainly depends of which SDLC model it was based on during its life cycle. Otherwise, it decreases the productivity of the industry, because it cannot get user's satisfaction nor can earn enough money.
- This is why in this lab we will select a proper SDLC model to develop our app properly.

## **3. Objectives**

- Software Development Life Cycle (SDLC) is a process used by the software industry to design, develop and test high quality software.
- The SDLC aims to produce a high-quality software that meets or exceeds customer expectations, reaches completion within times and cost estimates.

## **4. Methodology**

- The Software Development Lifecycle (SDLC) describes the systematic approach to developing software. The SDLC helps to ensure high quality software is build and release to end-users quickly with optimized cost. The SDLC follows a series of phases involved in software development. Depending on the SDLC framework, these phases may be adopt sequentially or in parallel.

### **Stage 1: Planning & Requirement Analysis**



- In this initial stage of the SDLC, we will analyze and translate business questions into engineering problems by considering a variety of factors such as cost, performance, functionality, and risk.
- Evaluate the scope of the project and then identify available resources. This stage may continue for a long period time and includes provision for strategic changes as the SDLC evolves.

## **Stage 2: Defining Requirements**

- The goal of this stage is to quantify the opportunities and risk of addressing the agreed requirements with the variety of resources and strategies you have available.
- The basic defining requirements are--
  - Economical: Is it financially viable to invest in the project based on the available resources?
  - Legal: What is the scope of regulations and the organization's capacity to guarantee compliance?
  - Operational: Can we satisfy the requirements within scope definition according to the proposed operational framework and workflows?
  - Technical: What is the availability of technology and HR resources to support the SLDC process?

## **Stage 3: Designing the Product Architecture**

- In this stage, we will have technical documentation that specifies:
  - I. Systems architecture
  - II. Configurations
  - III. Data structure
  - IV. Resource procurement model
- ❖ Desired output can include pseudocode, architecture reports and diagrams that include the necessary technology details. Where high-level design details include the desired functionality of software and system modules. Moreover, low-level design details can include the functional logic, interface details, dependency issues, and errors.

## **Stage 4: Building or developing the Product**

- In this stage, implementation follows the design phase. Several independent teams and individuals collaborate on feature development and coding activities.
- While the requirements analysis and design choices are already define, feedback from the development teams is review for potential change in direction of the design strategies.

- This is the longest process in the SDLC pipeline and it assists subsequent phases of software testing and deployment.

### **Stage 5: Testing the Product**

- In this stage, we will use testing to investigate the performance of the software and discover, identify potential issues to fix or address. Testing teams develop a test plan based on the predefined software requirements. The testing plan should:
  - Identify the resources available for testing
  - Provide instructions and assignments for testers
  - Select types of tests to be conducted
  - Determine what to report to technical executives and decision makers.
  - Testers often work collectively with development teams and rework the code-base to improve test results.

### **Stage 6: Deployment in the Market & Maintenance**

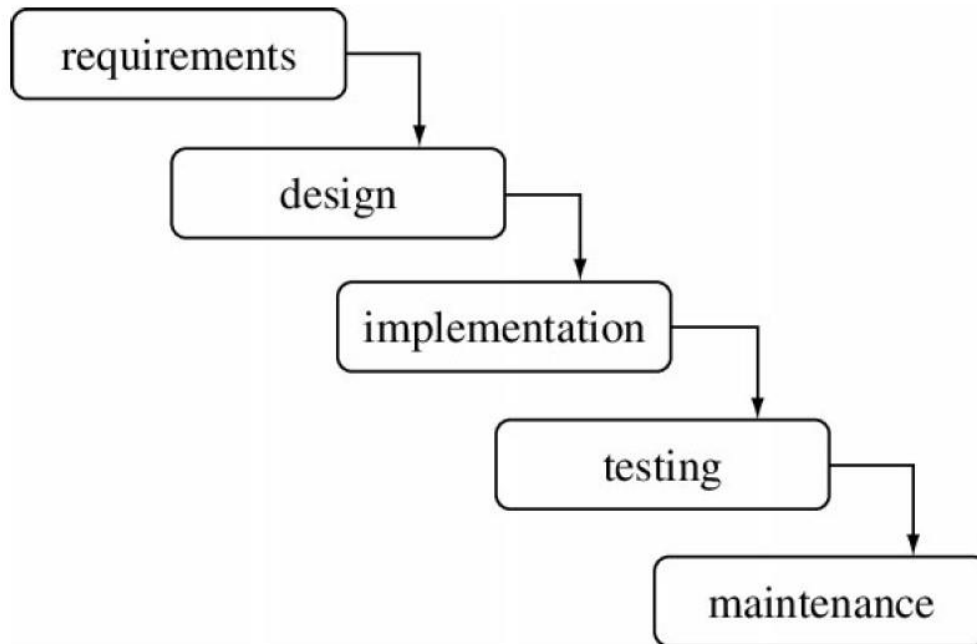
- As we have reached the final stage of the SDLC pipeline when we finished product has passed the necessary tests. Then we will make it available for release to end users in the real environment. Several procedures and preparation activities are involved before a software product can be ship, including:
  - Documentation
  - Transferring ownership and licensing,
  - Deploying and installing the product on customer systems.

## **5. SDLC Model**

There are most important and popular SDLC models for software industry.

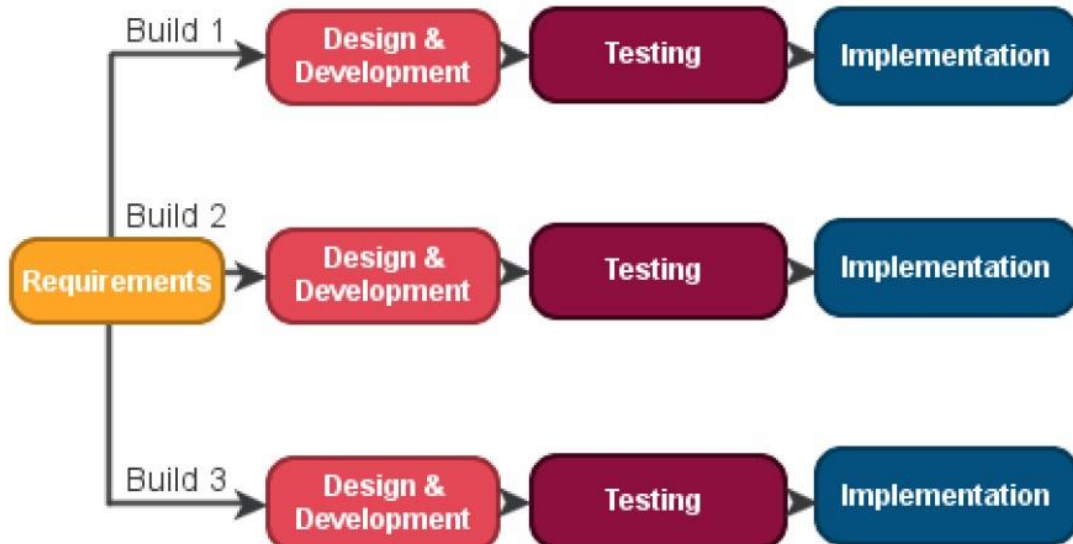
### **1. Waterfall Model**

Waterfall model was first SDLC Model and used widely in software Engineering to ensure success of the project. This process of software development is divide into separate phases and the input for the next phase sequentially.



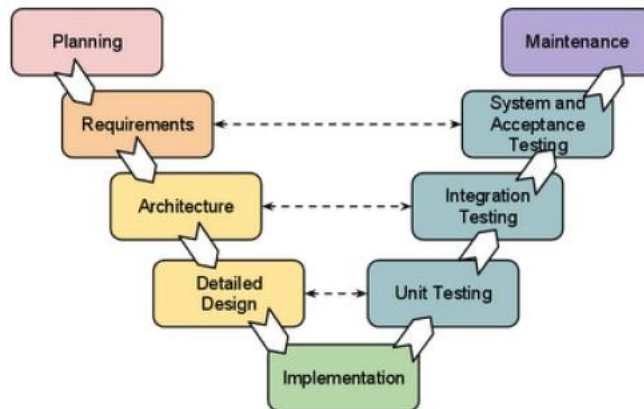
## 2. Iterative Model

This model process starts with a simple implementation of a subset of the software requirement and iteratively enhances the evolving version until the full system are implement. Every iteration, design modifications are make and new functional capabilities are add.



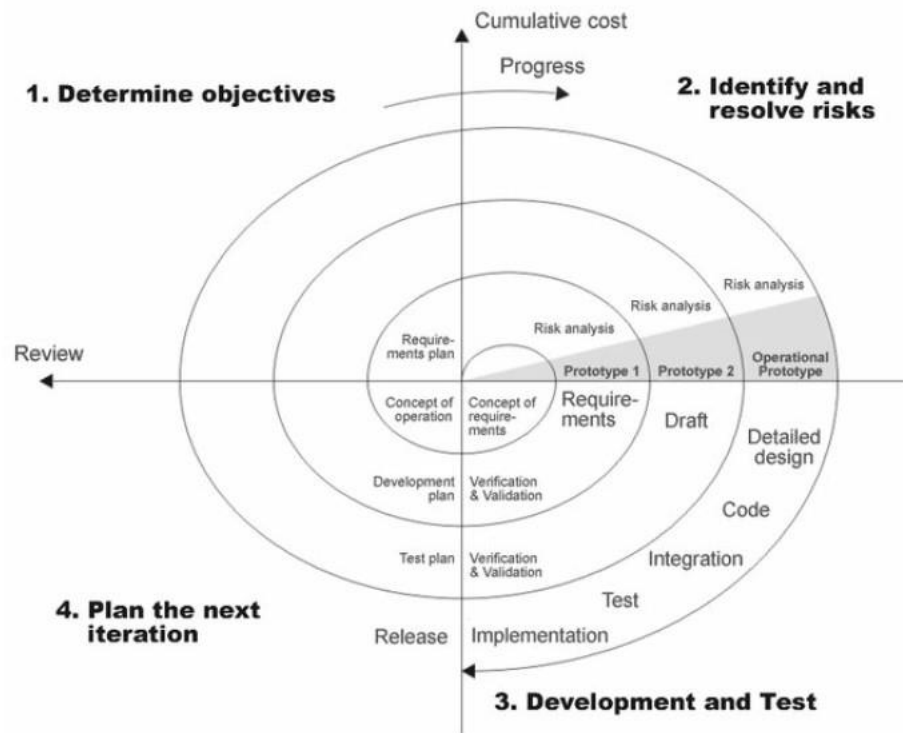
## 3. V-shape Model

V-shape Model is execution of process happens in a sequential manner in a V-shape. It known that verification and validation model and extension of the waterfall model.



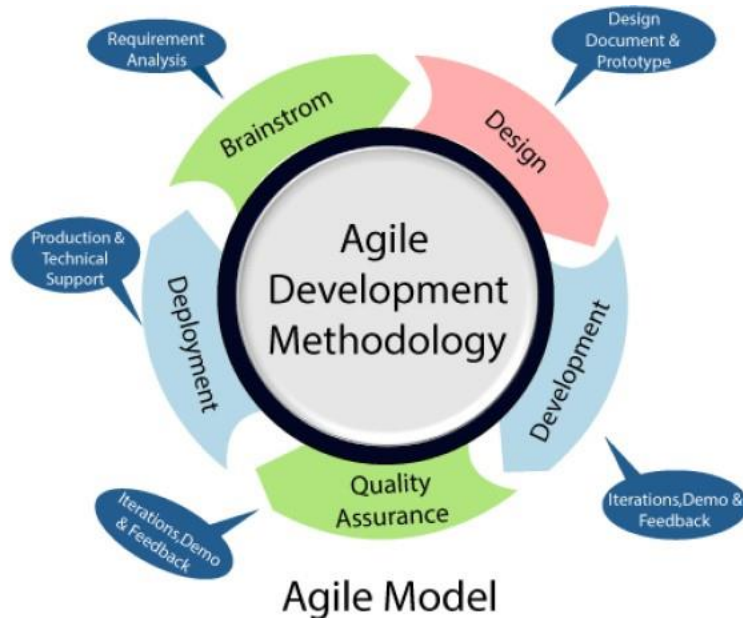
#### 4. Spiral Model

Spiral model has four phases and software project repeatedly passes through these phases in interactions called spirals. There phase is Design, Construct or build, Evaluation and risk analysis.



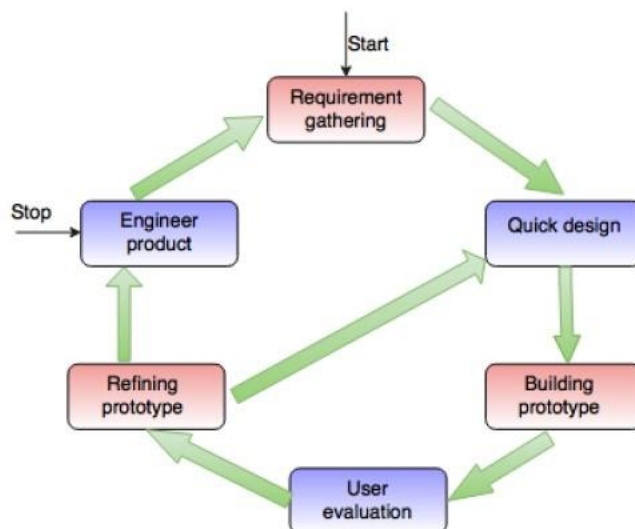
#### 5. Agile Model

Agile model is a combination of iterative and incremental process models with focus on process adaptability and customer satisfaction by rapid delivery of working software product.



## 6. Prototype model

Prototype process is a working model of software with some limited functionality but may not actually hold the exact logic of the original software.



## 6. Implementation

Priority	Criteria	Waterfall	V-shape	Iterative	Spiral	Agile	Prototype
5	Well known requirement	Yes	Yes	No	No	No	No
5	Technological knowledge	Yes	Yes	No	No	No	No
7	Efficiency	No	Yes	Yes	Yes	No	Yes
3	Usability	No	No	Yes	Yes	Yes	Yes
Total-15	Over all	10	17	10	10	3	10

- We are analysis that the V-shape priory is more than high other SDLC model. V-shape Priority is 17 out of 20. Therefore, we are select V-shape model for our file transfer application.
- We are choose V-shape method because if we are changes needed to be implemented at very little cost for the frequency of new incremented that are procedure. To implement a new feature the developers need to lose only the work of a few days, or even only hours, to roll back and implement it.
- In case of agile method, if we change a few functionalities at the middle of the development, we will easily be able to do it as other process will also simultaneously done along with it. Therefore, for these reasons V-Shape method will be the best for us than other SDLC models.

## 7. Discussion & Conclusion

- From all our discussion we can clearly understand how much important it is to select a proper SDLC model to build an application. We also learnt the types of SDCL models and their working process.
- By judging all those, we can see that the V-shape method will be suitable for use. Because the V-shape method is mainly base on the teamwork where everybody contributes his or her intellectual abilities to make the project better and better during the development process.
- In addition, we can even apply some of our modifications any time while building. This is why this method will be the best for us.
- As developers and entrepreneurs, it is our moral responsibility to provide better for humankind. In addition, we should always do it in the most efficient way.

## Team Evaluation

### Daily lab Work and Lab report

#### Daily work time

A screenshot of a Zoom meeting grid during 'Daily work time'. The grid shows four participants in a 2x2 layout. The top-left participant is Md. Abdullah Antor (183002126), a man with a beard wearing a light purple shirt. The top-right participant is Badhon Parvej, a man with a beard wearing a dark jacket over a red and white striped shirt. The bottom-left participant is Afrin Sufian (183002048), a woman with long dark hair wearing a pink and white patterned dress. The bottom-right participant is Badhon Parvej, the same man as in the top-right. Each video tile has a name label at the bottom and a 'Mute' button in the top right corner. The background of the tiles is black.

- Badhon Parvej (Host, me)  
- Afrin Sufian (183002048)  
- Md. Abdullah Antor 183002126  

- Badhon Parvej (Host, me)  
- Md. Abdullah Antor 183002126  
- Minhas Abedin Sohan (183002105)  
- S. M. Sherajul islam (183002077)  

#### Lab report time

Remaining Meeting Time: 05:30 | Upgrade to Pro

01:37:11

View

Afrin Sufian (183002048)

Afrin Sufian (183002048)

Badhon Parvej

Badhon Parvej

S. M. Sherajul islam (183002077)

Minhas Abedin Sohan (183002105)

Minhas Abedin Sohan (183002105)

Mute

Start Video

Security

Participants 4

Chat

Share Screen

Reactions

Apps

More

End

Participants (4)

Badhon Parvej (Host, me)

Afrin Sufian (183002048)

Minhas Abedin Sohan (183002105)

S. M. Sherajul islam (183002077)

Invite

Mute All

01:08:17

Afrin Sufian (183002048)

Afrin Sufian (183002048)

Badhon Parvej

Badhon Parvej

Md. Abdullah Antor 183002126

Participants (3)

Badhon Parvej (Host, me)

Afrin Sufian (183002048)

Md. Abdullah Antor 183002126

Invite

Mute All





**Green University of Bangladesh**  
**Department of Computer Science and Engineering (CSE)**

**Faculty of Sciences and Engineering**  
**Semester: (Spring, Year: 2021), B.Sc. in CSE (Day)**

**LAB REPORT NO 07**  
**Course Title: Software Engineering Lab**  
**Course Code: CSE-314                      Section: 183DA**

**Lab Experiment Name: Draw Class Diagram for our project.**

**Student Details**

	<b>Name</b>	<b>ID</b>
<b>1.</b>	Badhon Parvej	183002111
<b>2.</b>	Afrin Sufian	183002048
<b>3.</b>	Md. Abdullah Antor	183002126
<b>4.</b>	Minhas Abedin Sohan	183002105
<b>5.</b>	S.M Sherajul Islam	183002077

**Lab Date : 16-08-2021**  
**Submission Date : 22-08-2021**  
**Course Teacher's Name : Dr. Muhammad Aminur Rahaman**

**[For Teachers use only: Don't Write Anything inside this box]**

<b><u>Lab Report Status</u></b>	
<b>Marks:</b>	<b>Signature:</b>
<b>Comments:</b>	<b>Date:</b>

Name		ID	Responsibility
1.	Badhon Parvej	183002111	Team Lead, Methodology, Implement, Co-operate
2.	Afrin Sufian	183002048	Required Software, Objective, Implement, Co-operate
3.	Md. Abdullah Antor	183002126	Problem Analysis, Discussion & Conclusion
4.	Minhas Abedin Sohan	183002105	Problem Analysis
5.	S.M Sherajul Islam	183002077	Objective

Name		ID	Responsibility	Punctuality	Contribute	Co-operate	Meeting attend	Average
1.	Afrin Sufian	183002048	4.5	4	4	4	5	4.3
2.	Md. Abdullah Antor	183002126	4.5	4	3.5	3.5	5	4.1
3.	Minhas Abedin Sohan	183002105	4.5	4	3.5	3	5	4
4.	S.M Sherajul Islam	183002077	4.5	4	3.5	3	5	4

## 1. Title of the lab experiment

Draw Class Diagram for our project.

## 2. Objectives

To depict various aspects of the OOPs concept using Class Diagram.

### 2.1 Sub-Objectives:

- Class diagrams builds a static view of an application.
- It analyses and designs a static view of an application.
- It is a base for component and deployment diagrams.
- It describes the major responsibilities of a system.

## 3. Problem analysis

Our goal is to build a file transfer application. To build such a project like that we have to follow many steps. This kind of projects requires good planning and blueprint to implement them properly. This is why we need UML diagrams to build it. UML is standardize in class diagrams. Since classes are the building block of an application that is based on OOPs, so as the class diagram has an appropriate structure to represent the classes, inheritance, relationships, and everything those OOPs have in their context. It describes various kinds of objects and the static relationship between them.

**Problem statement and motivation for the given project:** As our project is a file transferring mobile app. It will have a few user interfaces so that it can interact with the users properly. However, the main challenge is to work in the backend. Cause it going to be hard for us to connect two devices wirelessly and then transferring data between them. This is why, to make our coding easier we have to create class diagram and with it we will try to code whatever we need inside them.

## 4. Methodology

The class is composed of three sections:

### Upper section:

This contains name of the class and always required, classifier or an object.

### Middle section:

This section contains attributes of the class and required, which a specific instant of a class.

**Bottom section:**

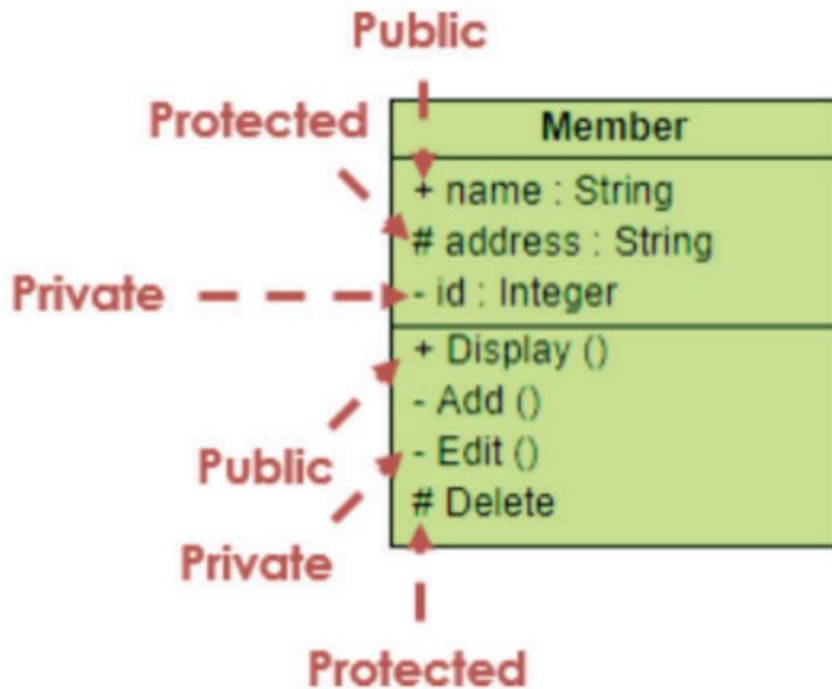
This section include class operations and displayed in list format, each operation takes up its own line.

**Member access Modifier:**

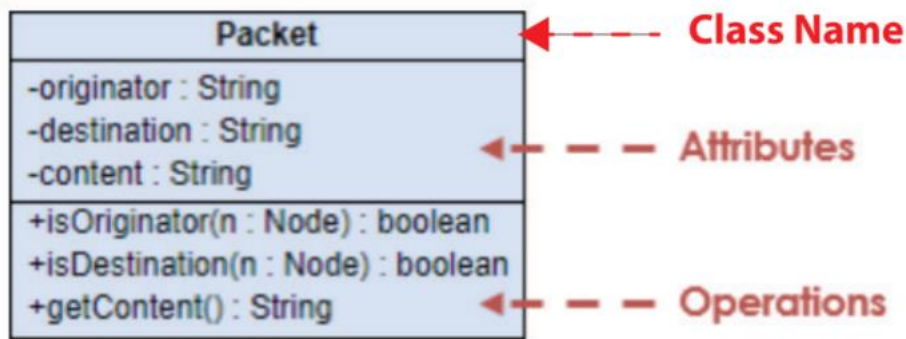
Every class have different access levels depending on the access modifier.

Access level with symbols:

- **Public (+)**
- **Private (-)**
- **Protected (#)**
- **Package (~)**
- **Derived (/)**
- **Static (underlined)**

**Additional class diagram components:****Class:**

Class template for creating objects and implementing behavior in a system using Name, Attributes, Methods.



- **Name**  
The first row in a class shape.
- **Attributes**  
The second row in a class shape and each attribute of the class is display on a separate line.
- **Methods**  
The Third row in a class shape and displayed in list format with each operation on its own line.

#### **Interfaces:**

Collection of operation signatures and/or attribute definitions that define a cohesive set of behaviors. It is similar to class, except that a class can have an instance of its type.

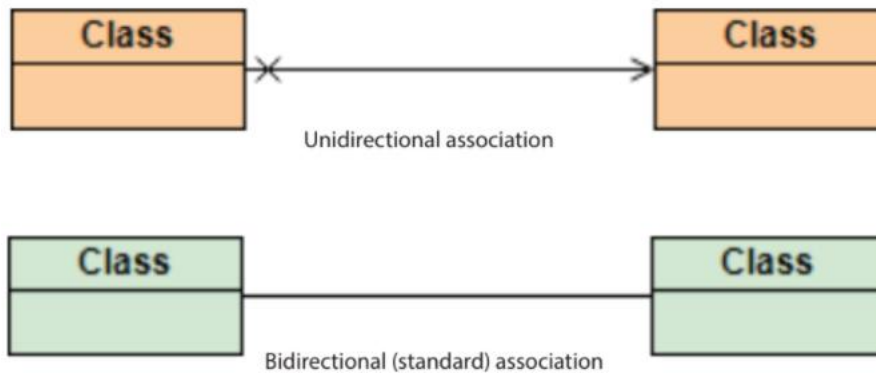
#### **Objects:**

Object are instances of a class. Object can be add to a class diagram to represent either concrete or prototypical instances.

#### **Relationships:**

In UML, relationships types:

- **Association:**  
Association is a broad term that encompasses just about any logical connection or relationship between classes.



- **Unidirectional association:**

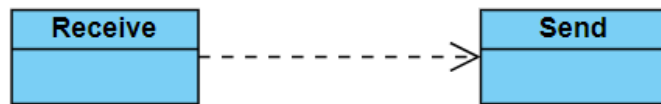
A slightly less common relationship between two classes. One class is aware of the other and interacts with it. Unidirectional association is model with a straight connecting line that points an open arrowhead from the knowing class to the known class.
- **Bi-directional association:**

The default relationship between two classes. Both classes are aware of each other and their relationship with the other. This association is represent by a straight line between two classes.
- **Multiplicity:**

Multiplicity is the active logical association when the cardinality of a class in relation to another is being depict.
- **Generalization:**

It is refers to a type of relationship wherein one associated class is child of another by virtue of assuming the same functionalities of the parent class. In other words, the child class is a specific type of the parent class.
- **Dependency:**

Dependency is a semantic relationship between two or more classes where a change in one class cause changes in another class.



- **Abstract Classes:**

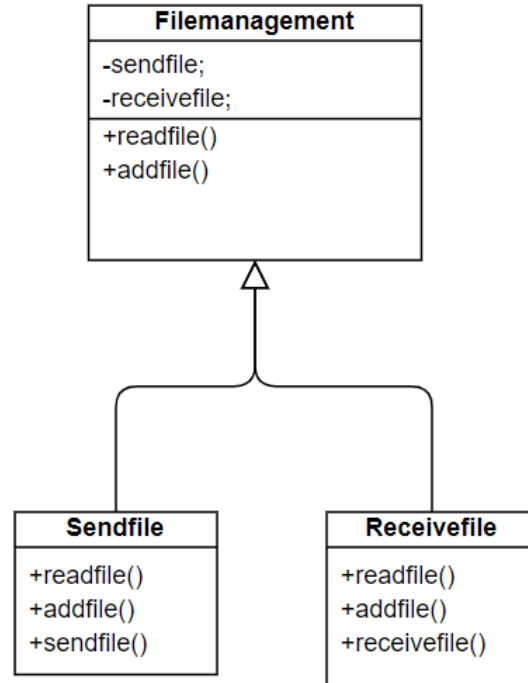
In the abstract class, no objects can be a direct entity of the abstract class. The abstract class can neither be declared nor be instantiated. It is use to find the functionalities across the classes. The notation of the abstract class is similar to that of class

## 5. Required Software

There are several software available that can be used online and offline to draw these class diagrams like as follows.

1. Visual Paradigm for UML 8.2 (online link: <https://online.visual-paradigm.com/>)
2. Start UML.
3. Lucid chart and other drawing tools.

## 6. Implementation



## 7. Discussion & Conclusion

At the end of all of works, we understand the class diagram is a structure of UML models. It provides detailed information about the properties and interfaces of the classes, it can be consider as the main model and regard the other UML diagrams as supplementary models. This is why it is very important to make a good class diagram to make our project correctly.

**Team Evaluation**  
**Daily lab Work and Lab report**



00:29:42

View

Afrin Sufian (183002048)

Badhon Parvej

Md. Abdullah A...

Md. Abdullah Antor 183002126

S. M. Sherajul Islam (183002077)

Connecting to audio ✓

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Participants (5)

Badhon Parvej (Host, me)

🔊 🔒

Afrin Sufian (183002048)

🔊 🔒

MA Md. Abdullah Antor 183002126

🔊 🔒

Minhas Abedin Sohan (18300210...

🔊 🔒

S. M. Sherajul islam (183002077)

🔊 🔒

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