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Designing and Developing Interactive Forum for Loss and Damage Program

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Designing and Developing Interactive Forum for Loss and Damage Program

By

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Student ID: 1730894

Autumn, 2022

Supervisor:

Sabrina Alam

Lecturer,

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Independent University, Bangladesh

January 19, 2023

Dissertation submitted in partial fulfilment for the degree of

Bachelor of Science in Computer Science

Department of Computer Science & Engineering

Independent University, Bangladesh

Attestation

This is to certify that the report is entirely written by me, Fauzia Hossain (ID: 1730894), submitted in partial fulfillment of the requirement for the Degree of Computer Science from Independent University, Bangladesh (IUB). The report was completed under the supervision of Sabrina Alam, lecturer of department of CSE, IUB. I also certify that all my work is genuine and that I have learned and improved my work over the course of this internship program by involving myself in a working environment. All the sources of information in this project and report have been duly acknowledged in it.

Fauzia

Signature

01.02.2023

Date

Fauzia Hossain

Name

Acknowledgement

At the very beginning, I would like to express my deepest gratitude to almighty Allah for giving me the courage and the forbearance to complete my internship and prepare this report within the predetermined time.

I am grateful to **Independent University, Bangladesh (IUB**) for providing this knowledgeable and wonderful internship experience as a platform to enrich my career as well as to the **International Centre for Climate Change and Development (ICCCAD)** for allowing me to do my internship at their organization. During the period of my internship work, I got significant assistance from a diverse range of sources, which I would like to acknowledge here with heartfelt appreciation and pleasure. I am grateful for their enthusiastic mentoring, useful constructive criticisms and kind comments.

First and foremost, I am grateful to my supervisor **Sabrina Alam,** lecturer of department of CSE, IUB and course coordinator **Subrata Kumar Dey**, senior lecturer of department of CSE, IUB. I am also grateful to **Sanzar Adnan Alam**, lecturer of department of CSE, IUB to help me understand the fundamentals about web development which in turn helped me during my internship program. From the commencement of this course till the end of my internship, they let me freely encroach on their valuable time. Their advice, support and recommendations gave me the required insight into the issues and set the road for a meaningful completion of the task in a short period of time. I am very much grateful towards my external supervisor **Mehedi Hasan Tuhin**, web and IT officer, ICCCAD for his guidance and support that I needed for the fulfillment of my internship. I also want to offer my deepest appreciation and gratitude to my colleagues at ICCCAD and my friends for their time and concern in guiding me through the internship.

I also want to thank my family, who have not only financially supported me but have always believed in me and inspired me to achieve the things that I have.

Letter of Transmittal

January 19, 2023

To,
Sabrina Alam
Lecturer
School of Engineering, Technology & Sciences
Independent University Bangladesh.

Subject: Submission of Internship Report, autumn 2022.

Dear Ma’am,

I am honored to share my report on my internship at the International Center for Climate Change and Development (ICCCAD). I try to convey my internship's efforts, accomplishments, and experiences in my report. All of the pieces on display have been created with the utmost sincerity and honesty.

During my internship at ICCCAD, I obtained not only real-world professional experience but also a greater understanding of the department's operations and many factors. This paper examines the office as well as the department's functions in depth. As a record of my efforts during the internship periods, I have documented all of the project work that I completed.

I pray and hope that you will find this report fascinating and that it will meet your expectations. I have done my best to prevent any flaws. I would also like to express my gratitude for allowing me to submit this report.

Sincerely,

Fauzia Hossain
ID: 1730894

Evaluation Committee

.....

Signature

.....

Name

Md Abu Sayed

.....

Internal Examiner-1 / Panel Member-1

.....

Signature

Rubayed Mehedi

.....

Name

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External Examiner-2 / Panel Member-2

.....

Signature

Sabrina Alam

.....

Name

SABRINA ALAM

.....

Supervisor of the intern

.....

Signature

.....

Name

Mahady Hasan

.....

Head, Department of Computer Science & Engineering

Abstract

This paper considers several instances that arose in the designing and execution of the web design and development of "Loss and Damage Forum" webpage. This paper considers several issues that arose during the process of designing and implementing this website as well as the data used and the methodology used during creating the website. This paper also entails languages used during the development. One of the major drawbacks during the process was to implementation of an interactive map that shows all the loss and damage actors around the world and news related to the loss and damage program. The map is supposed to be created using a well-known technology called ArcGIS.

The forum was designed grounded on available data, provided by the loss and damage team and other design operation tools. The real-life situations in this website are the news related to loss and damage as well as the events. The Gantt chart is created using CPM system which also helped in estimating the time frame. Excel spreadsheet was also used during the process of making the Gantt chart. The report contains some screenshots of the loss and damage forum webpage. All the data used in this report are genuine and full proof.

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Chapter 1

Introduction

1.1 Overview/Background of the Work

Loss and Damage forum is a platform that needs to be developed so that it creates a virtual workspace where resources and tools are shared among a group of practitioners, researcher and decision makers across the world. The forum required special features to view information such as getting local level activities as well as national level activities by using user geolocation with a content filtering option. It will also have categories such as water level loss and damage, sea rise water level damage, etc. where user can select their interested option and get all the relevant contents such as news and event of the categories. The forum will also have features that uses the world map to address LND actors all around the world including their world, and ask questions to the expert as well as give feedback as a member.

1.2 Objectives

- To develop this forum-based platform, main challenges would be to get all the news and events from relevant sources of existing LND sites and dynamically present on this LND forum front page.
- Show contents with country filtration and demographic option.
- Another most important feature would be to avoid spamming and unwanted questions with pre-published content monitoring option.

1.3 Scopes

- We will be using AI and web scrapper to get all the news and events from relevant sources around the world. With the help of AI we can set instruction to import filtered data from preferred sources and get the contents from them automatically by a pre-set time synchronization.
- We will be using geographical filtration and visual user experience. We are planning on using ArcGIS developer tool which helps users to set all the maps and geo spatial data in an interactive way.
- We must minimize the unwanted questions and spamming for which we have decided to create a pre-approval stage on content publishing with an admin approval option.

Chapter 2

Literature Review

2.1 Relationship with Undergraduate Studies

The different courses offered in IUB was an immense help for this project. I learned MySQL in Database management course (CSE303). For this project I have decided to take the help of MySQL. My programming logic was constructed with the help of courses such as Data Structure (CSE203), Algorithms (CSE211), Database Management System (CSE303), Web Application and internet (CSC455), Object Oriented Programming Course (CSE213) helped me build the codebase in a structured, organized, and professional way. Courses beyond the ones mentioned above helped me solve various real-life problems that occurred while completing the project.

The proposed Technology to be implemented (Client/Web/Standalone)

The technologies and languages that are going to be a part of the system are given below.

a. Technical Language: PHP, Python, MySQL,HTML, JavaScript, CSS, jQuery
b. Database System: MySQl, Firebase(for testing)
c. Technologies: ArcGIS developer and cloud solution, Web Scrapping tool (parsehub), REST API, SSL tool, CDN
d. Frontend Application: WordPress
e. Server Platforms: Cloud server (AWS/Digital Ocean)

2.2 Related works

- EnviroLink Forum
- Raddit Environment
- Global Forum Environment – OECD
- Green Forum

Chapter 3

Project Management & Financing

3.1 Management Plan / Work Breakdown Structure (WBS)

WBS (work breakdown structure) is a tool what make the work more manageable and approachable. This approach helps to complete all the task within fixed time duration. The WBS (work breakdown structure) chart of my whole internship work is given below:

Serial no.	Task title	Start date	End date	Durations (Days)
1	Introductions	01.10.22	02.10.22	2
2	Initial study	03.10.22	09.10.22	7
3	Literature review	10.10.22	14.10.22	5
4	Methodology	15.10.22	18.10.22	4
5	Planning	19.10.22	24.10.22	5
6	Foundation	25.10.22	30.10.22	6
7	Exploration	01.11.22	04.11.22	5
8	Engineering	05.11.22	09.11.22	5
9	Deployment	10.11.22	01.12.22	20
10	Testing	02.12.22	11.12.22	12
11	Implementation	12.12.22	21.12.22	12
12	Critical Appraisal and Evaluation	22.12.22	28.12.22	7
13	Conclusion	29.12.22	30.12.22	2
Total 90 days				90 Days

Table 3.1: Work Breakdown Structure (WBS).

3.2 Gantt Chart

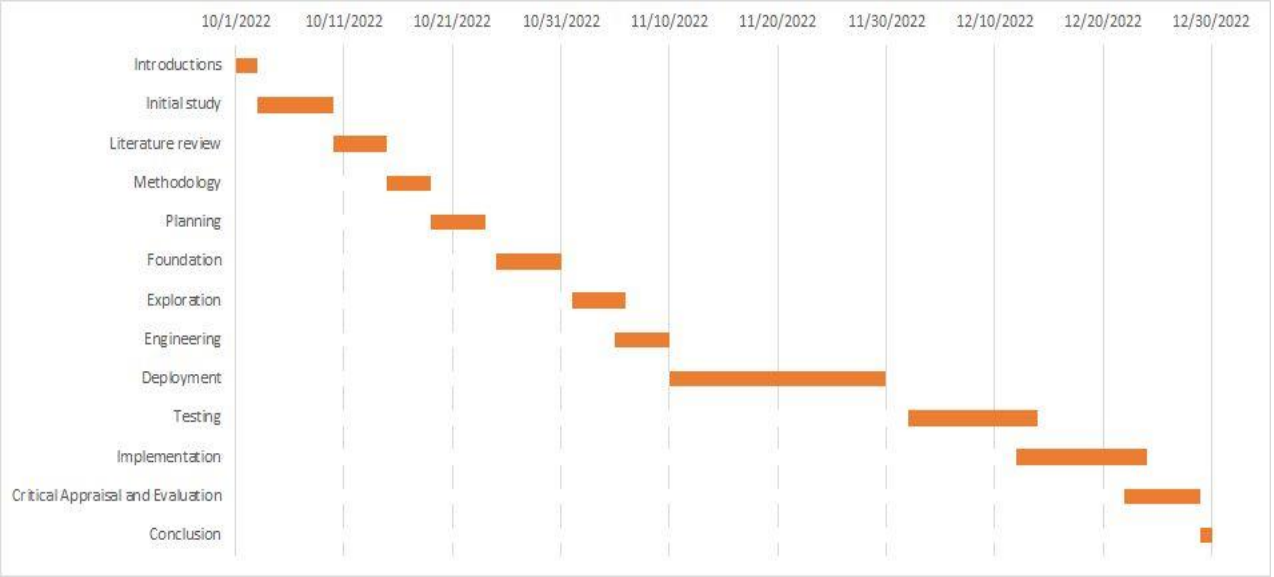

Figure 3.1: Gantt chart.

3.3 Time Duration / Time Boxing

The whole system is done using agile methodology. All the tasks are iterative in this approach. Time boxing is one of the useful parts for this project management approach (scrumming, 2019). In this time boxing process that we follow are shown below:

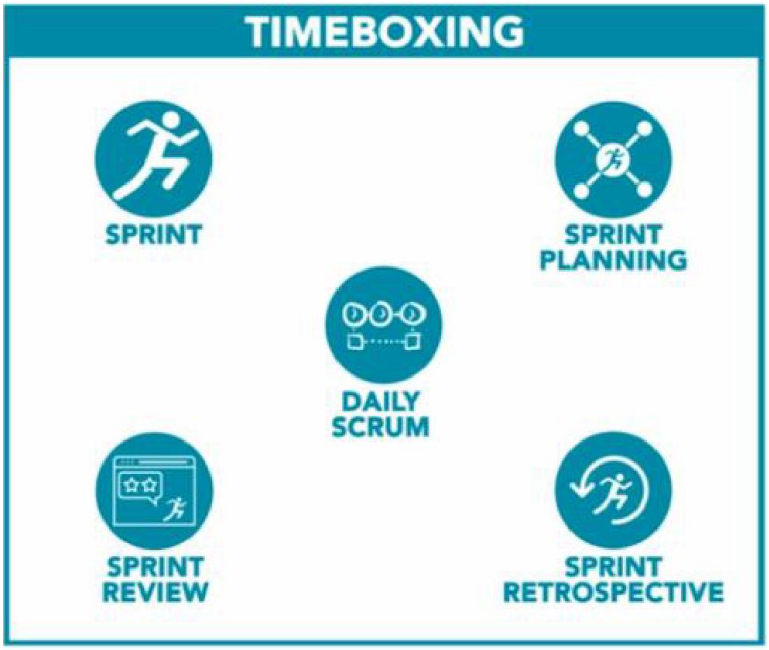

Figure 3.1: Time Boxing.

This is one of the critical components of a good scrum. Sprint used for utilize the length of the project. Sprint planning is a meeting with timeboxed 8 hour or less for a month. Daily scrum process is actually a timebox for 15 minutes per day what helps to synchronize teams' activities. Sprint review is also a time boxing for adapting backlog based on feedbacks. Sprint retrospectives is an event that inspects itself and identifies processes.

3.4 Estimated Costing:

Serial No.	Sector	Note	Qty.	Mode of Unit	No. of Unit	Unit Cost (BDT)	Total (BDT)
1	Web application design and Development	In-house	1		1	0	0
2	Domain and Web Hosting		1	Year	1	55000	55000
3	Web and Visual tools (canva,SSL,CDN)		1	Year	1	30000	30000
4	Other tools (ex: Maintenances)	As Per Office policy	NA	NA	NA	NA	NA
	Grand Total						85,000

Table 3.2: Estimated Costing.

Chapter 4

Methodology

A group of methods or a specific technique is referred to as methodology. It is beneficial to offer suitable guiding principles when designing an application or system.

There are many different approaches for generating applications on software development sites. One of those is agile. Agile is an evolutionary project management methodology in which end users, customers, and self-organizing, cross-functional teams work together to co-create requirements and solutions.

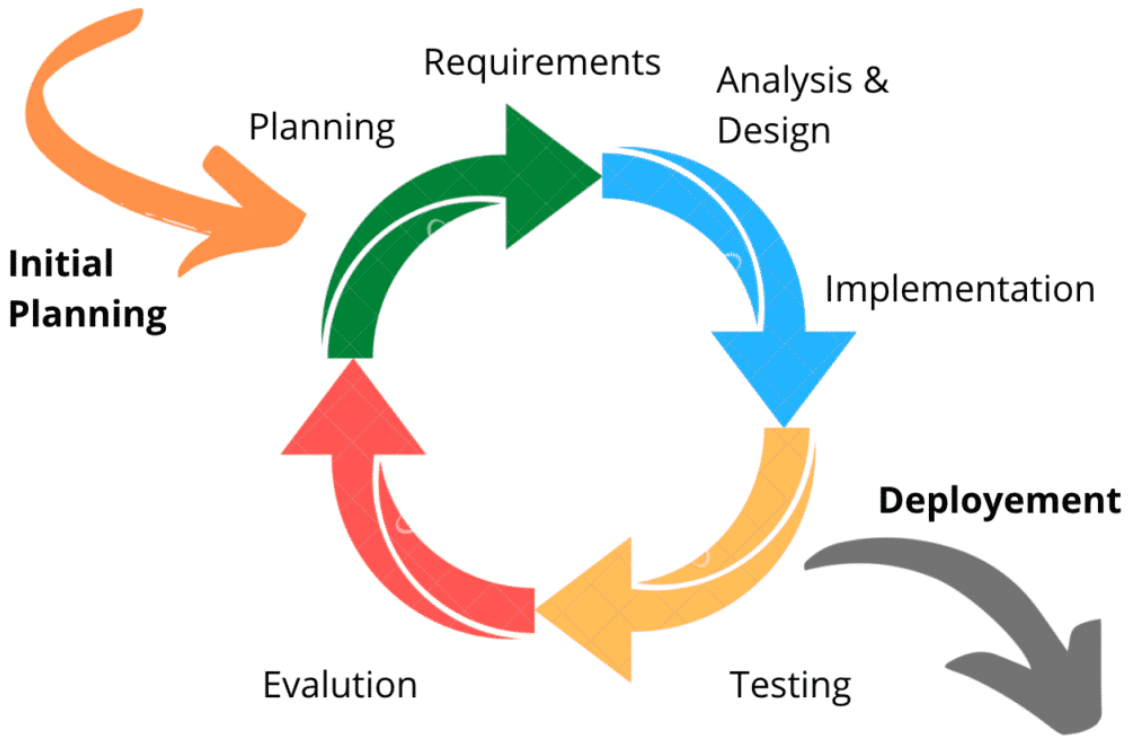

Figure 4.1: Agile Methodology.

It is a project management methodology that focuses on continuous improvement in the development of an application or a system by using short development cycles called "sprints."

In the creation of this project, our team used the agile scrum framework. This framework enables people to tackle complicated adaptive challenges while efficiently and innovatively producing goods of the greatest quality. Scrum is a lightweight, easily understood, and challenging to master methodology.

The reason of using Scrum framework is given below:

- Higher productivity.
- Better-quality products.
- Reduced time to develop
- Improved stakeholder satisfaction.
- Better team dynamics.
- Happy with outputs.

Chapter 5

Body of the Project

The Loss and Damage Forum (LDF) which is a collaborative platform and virtual workspace where resources and tools are shared among a group of practitioners, researchers and decision makers across the world, with a prime focus of connecting local to global, to support and address climate change induced loss and damage.

With the hope of efficiently communicating the realities from the ground, LDF will be showcasing stories in different regions. Through this event, such lived experiences will be shared to proactively frame the discussions taking place over the course of the conference and generate both evidence and solutions.

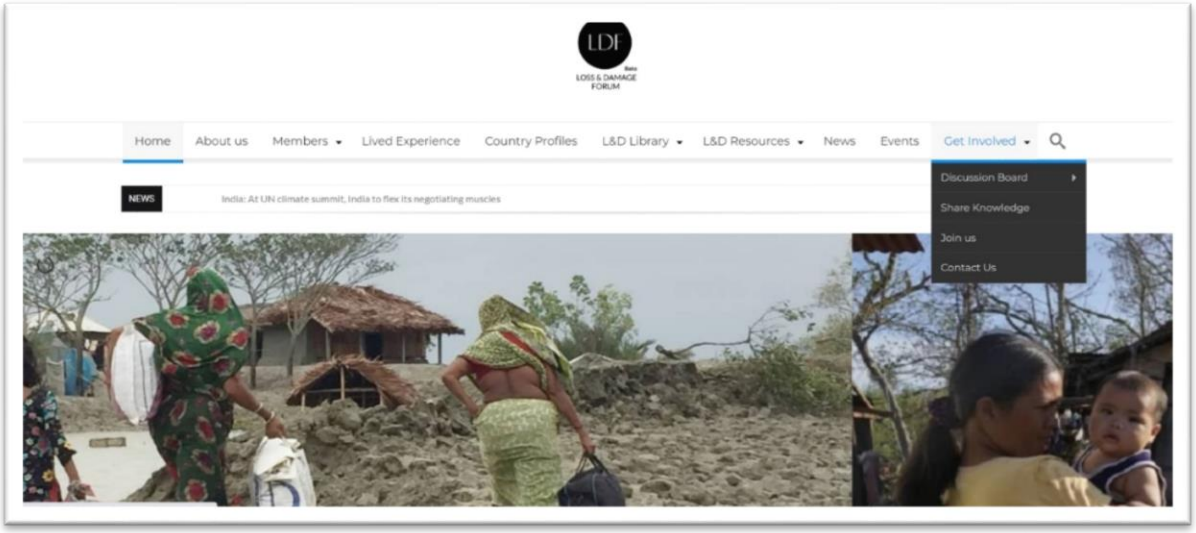

Figure 5.1: Loss and Damage Home Page.

To develop the interactive collaborative platform, we need to implement the following features on this project. The requirements which has been analyzed for so long to develop this system will going to be cover maximum objective requirements of the proposed system. Here is all the overall feature requirement list given below:

5.1 Overall Application Feature Requirement List

The project contains three main modules:

- Publication and information dissemination
- Country Based information (using geographical filtration)
- Discussion Board

5.1.1 Publication and information dissemination

- Membership information
- Lived Experience
- Library
- Capacity building resources
- News and Events

5.1.2 Country Based information

- Country Case Studies (using geographical filtration)
- Country based blog and news
- Country Events

5.1.3 Discussion Board

- To register & save new user
- To give control of the whole system in one hand (Admin)
- Topic creation
- Topic Discussion
- Categories
- Question Answer
- Moderation review

More Features

Membership:



Figure 5.2: Membership.

L&D Library:

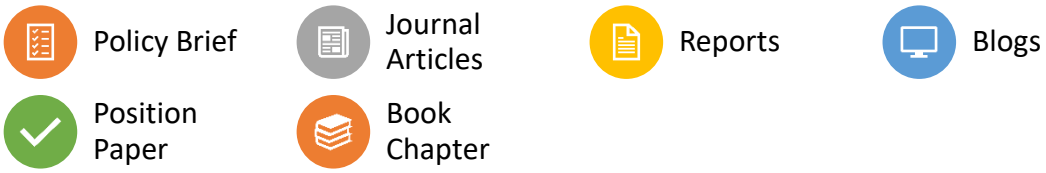

Figure 5.3: L&D Library.

Showing Loss and Damage News and Events:

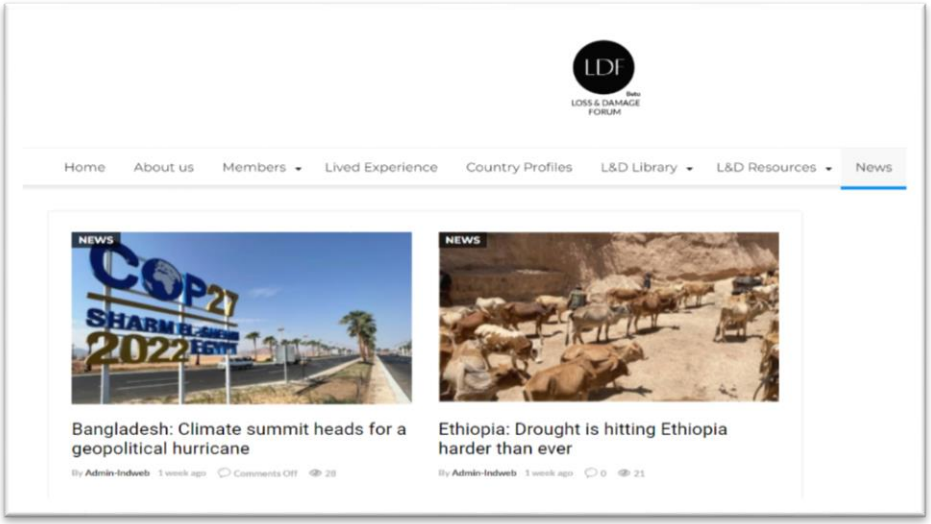

Figure 5.4: Loss and Damage News & Events.

Showing Country Profile Page:

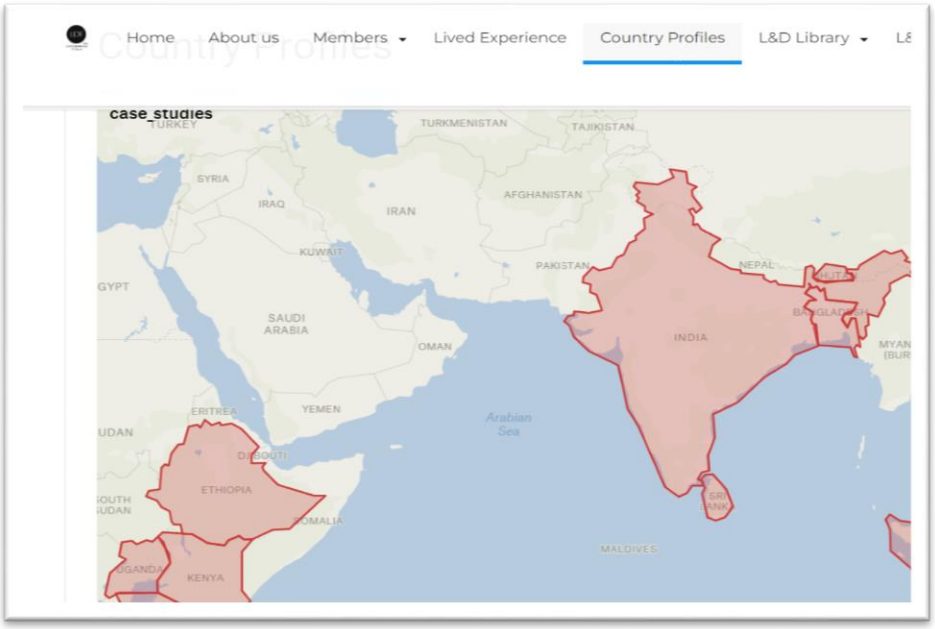

Figure 5.5: Country Profile Page.

5.2 Requirement Analysis

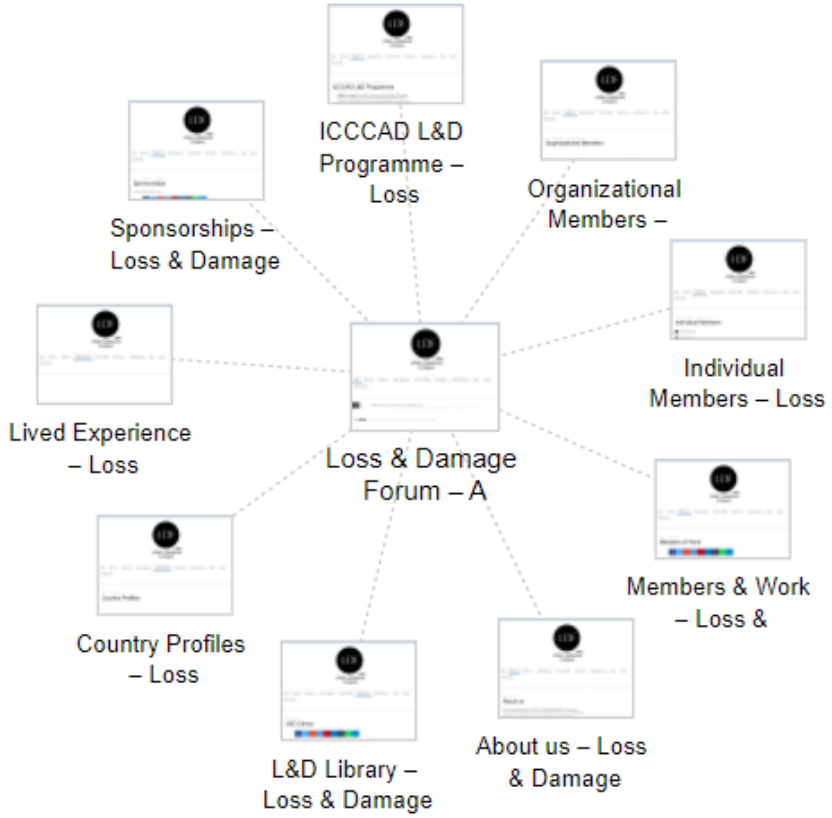

Figure 5.6: Requirement Analysis.

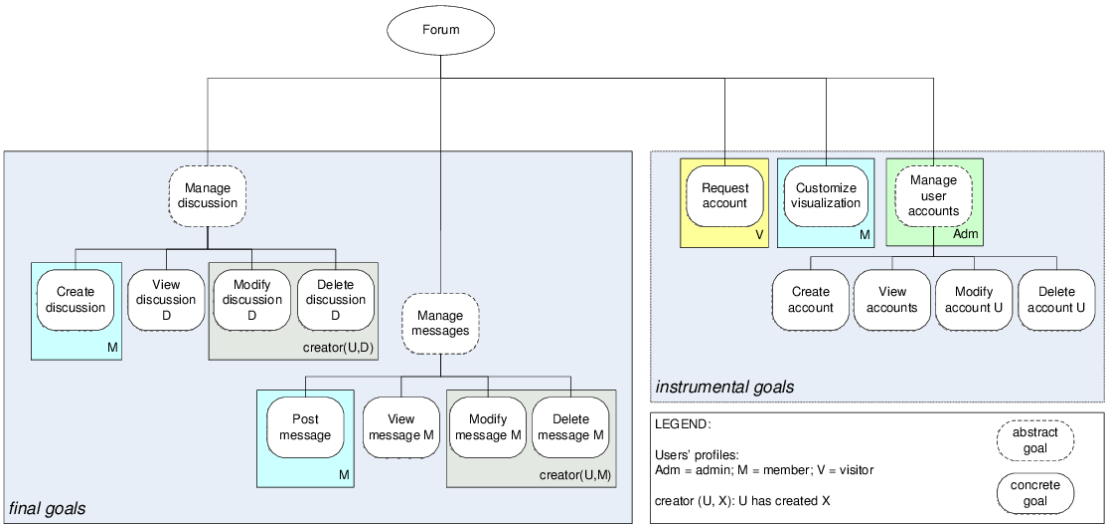

Figure 5.7: Activity Diagram.

5.3 Future implementation (Client/Web/Standalone)

The technologies and languages which are going to be implemented in this system to develop the proposed system are given below:

a. Technical Languages: PHP, Python, MySQL, HTML, JavaScript, CSS, jQuery, Bootstrap, jQuery,
b. Databases Systems MySQL
c. Technologies: Arc GIS developer and Cloud solution, Web Scrapping tool (parsehub), REST API, SSL tool (let's encrypt), CDN.
d. Frontend Application: WordPress
e. Server Platforms: Cloud server (AWS/Digital Ocean)

Portal URL: https://lossanddamageforum.org/

5.4 Requirement Analysis

5.4.1 Functional Requirement:

- The forum must allow a membership feature for Individual members, Organizational Members and Sponsorships.
- The forum must include a tab for live experience that holds all the loss and damage related stories
- The country profile of this forum will have a map created using the tool ArcGIS that shows the lnd actors all over the world and the news related. The news will be extracted from other places using API.
- The L&D Library will contain publications such as policy briefs, journal articles, IPCC reports and other publications
- There should be a tab that shows all the loss and damage resources such as FAQs, interactive sessions, CB resources and comics.

5.4.2 Feature wise business requirement:

BR No.	Feature	Module	Details	Phase/ Priority *
BR 001	Ability to be a member	Membership module	The system will have the ability to electronically input membership data and later on view different comparisons between the data from the dashboard such as individual member, sponsorship, etc.	5
BR 002	Ability to view or submit live experience stories regarding loss and damage.	Story telling module	The system will have the ability to allow members of loss and damage to input their own stories or view stories published by other members or loss and damage actors	2
BR 003	Ability to view country profiles, the actors from different countries and the news and events that took place in those countries.	Mapping module	With the help of the technology ArcGIS and the usage of API will allow the admin to update the map accordingly or sometimes even automatically.	4
BR 004	Ability to view or upload any publications by the members of the loss and damage program.	Upload module	The system will have the ability to input assessment data such as policy briefs, publications, journals, etc.	1
BR 005	The loss and damage resources will allow users to participate in Q&A sessions, view FAQs, view comics, etc	Resource module	The system will also have the ability to allow users to have an interactive Q&A session with the loss and damage actors, view FAQs, view comics, etc.	3

Table 5.1: Feature wise business requirement.

5.4.3 Non-Functional Requirement:

Non-functional requirements or NFRs are a set of specifications that describe the system's operation capabilities and constraints and attempt to improve its functionality. These are basically the requirements that outline how well it will operate including things like speed, security, reliability, data integrity, etc.

The non-functional requirement for the loss and damage forum is the quick response of the questions. The other non-functional requirement is the updated version of the country profile map.

5.5 System Analysis

It is a process of collecting and interpreting facts, identifying the problems, and decomposition of a system into its components.

System analysis is conducted for the purpose of studying a system or its parts in order to identify its objectives. It is a problem-solving technique that improves the system and ensures that all the components of the system work efficiently to accomplish their purpose.

5.6 Feasibility Analysis

5.6.1 Purpose

The purpose of loss and damage forum to create a knowledge hub and an integrated platform to connect local to global. LDF is centered on discussion, creating a knowledge hub, having a searchable archive of loss and damage resources, and an integrated instant discussion active board, etc. LDF mission is to connect experts and practitioners from each corner of the world in one unified platform to exchange information, knowledge dissemination to strengthen communication networks. It will provide an outstanding living platform to reach any part of the world with a broader spectrum of activities related to loss and damage on an instance.

5.6.2 Economic feasibility:

i. Cost-Benefit Analysis:

	A	B	C	D	E	F	G	H
1		Year 00	Year 01	Year 02	Year 03	Year 04	Year 05	Year 06
2	Development cost	(1,00,00,000 BDT)						
3	Operation & maintenance cost		(2,00,000 BDT)	(3,00,000 BDT)	(4,00,000 BDT)	(5,00,000 BDT)	(12,00,000 BDT)	(24,00,000 BDT)
4	Discount factors for 12%	1	0.893	0.797	0.712	0.636	0.567	0.507
5	Present value	(1,00,00,000 BDT)	(1,78,600 BDT)	(2,39,100 BDT)	(2,48,800 BDT)	(3,18,000 BDT)	(6,80,400 BDT)	(12,16,800 BDT)
6	Cumulative cost over lifetime	(1,00,00,000 BDT)	(1,01,76,600 BDT)	(1,04,17,700 BDT)	(1,07,02,500 BDT)	(1,10,20,500 BDT)	(1,17,00,900 BDT)	(1,29,17,700 BDT)
7								
8	Benefits from new operation	0 BDT	30,00,00 BDT	32,00,000 BDT	34,00,000 BDT	43,00,000 BDT	47,00,000 BDT	51,00,000 BDT
9	Discount factors for 12%	1	0.893	0.797	0.712	0.636	0.567	0.507
10	Present value	0 BDT	26,79,000 BDT	25,50,400 BDT	24,20,800 BDT	27,34,800 BDT	26,64,900 BDT	25,85,700 BDT
11	Cumulative benefit over lifetime	0 BDT	26,79,000 BDT	52,29,400 BDT	76,50,200 BDT	1,03,85,000 BDT	1,30,49,900 BDT	1,56,35,600 BDT
12								
13	Cumulative costs+benefits	(1,00,00,000 BDT)	(74,97,600 BDT)	(51,88,300 BDT)	(30,51,300 BDT)	6,35,500 BDT	13,44,900 BDT	27,17,900 BDT
14								

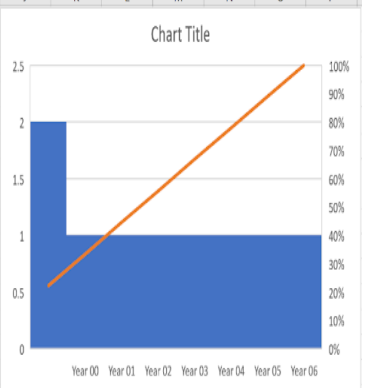

Figure 5.8: Cost-Benefit Analysis.

ii. Net Present Value:

		Year 00	Year 01	Year 02	Year 03	Year 04	Year 05	Year 06	Total
2	Development cost	(1,00,00,000 BDT)							
3	Operation & maintenance cost		(2,00,000 BDT)	(3,00,000 BDT)	(4,00,000 BDT)	(5,00,000 BDT)	(12,00,000 BDT)	(24,00,000 BDT)	
4	Discount factors for 12%	1	0.893	0.797	0.712	0.636	0.567	0.507	
5	Present value	(1,00,00,000 BDT)	(1,78,600 BDT)	(2,39,100 BDT)	(2,48,800 BDT)	(3,18,000 BDT)	(6,80,400 BDT)	(12,16,800 BDT)	
6	Cumulative cost over lifetime								(1,29,17,700 BDT)
7									
8	Benefits from new operation	0 BDT	30,00,00 BDT	32,00,000 BDT	34,00,000 BDT	43,00,000 BDT	47,00,000 BDT	51,00,000 BDT	
9	Discount factors for 12%	1	0.893	0.797	0.712	0.636	0.567	0.507	
10	Present value	0 BDT	26,79,000 BDT	25,50,400 BDT	24,20,800 BDT	27,34,800 BDT	26,64,900 BDT	25,85,700 BDT	
11	Cumulative benefit over lifetime	0 BDT	26,79,000 BDT	52,29,400 BDT	76,50,200 BDT	1,03,85,000 BDT	1,30,49,900 BDT	1,56,35,600 BDT	1,56,35,600 BDT
12									
13	NET PRESENT VALUE								27,17,900 BDT
14									

Figure 5.9: Net Present Value.

iii. Return on Investment:

ROI=(1,56,35,600 - 1,29,17,700)/ 1,29,17,700

=21%

iv. Payback Analysis:

Payback analysis= 30, 51,300/ (6, 35,500+30, 51,300)

=0.83

Therefore, the payback period is approximately 3.4 years

5.6.3 Technical feasibility

The development of this system using MiySQL as the database of this system, it is a new kind of database which supports more users and is suitable for large and medium-sized data amount needs.

- Technical Language: PHP, Python, MySQL,HTML, JavaScript, CSS, jQuery
- Database System: MySQl, Firebase(for testing)
- Technologies: ArcGIS developer and cloud solution, Web Scrapping tool (parsehub), REST API, SSL tool, CDN
- Frontend Application: WordPress
- Server Platforms: Cloud server (AWS/Digital Ocean)

To sum up, the design and development of the technology of this system and the condition of the hardware are satisfied, therefore, it is technically feasible.

5.6.4 Operation feasibility

Our solution gives all the required features which will be hosted on a website along with an app developed using flutter, so it will be available for both ios/android users.

5.7 System Design

Fishbone Diagram:

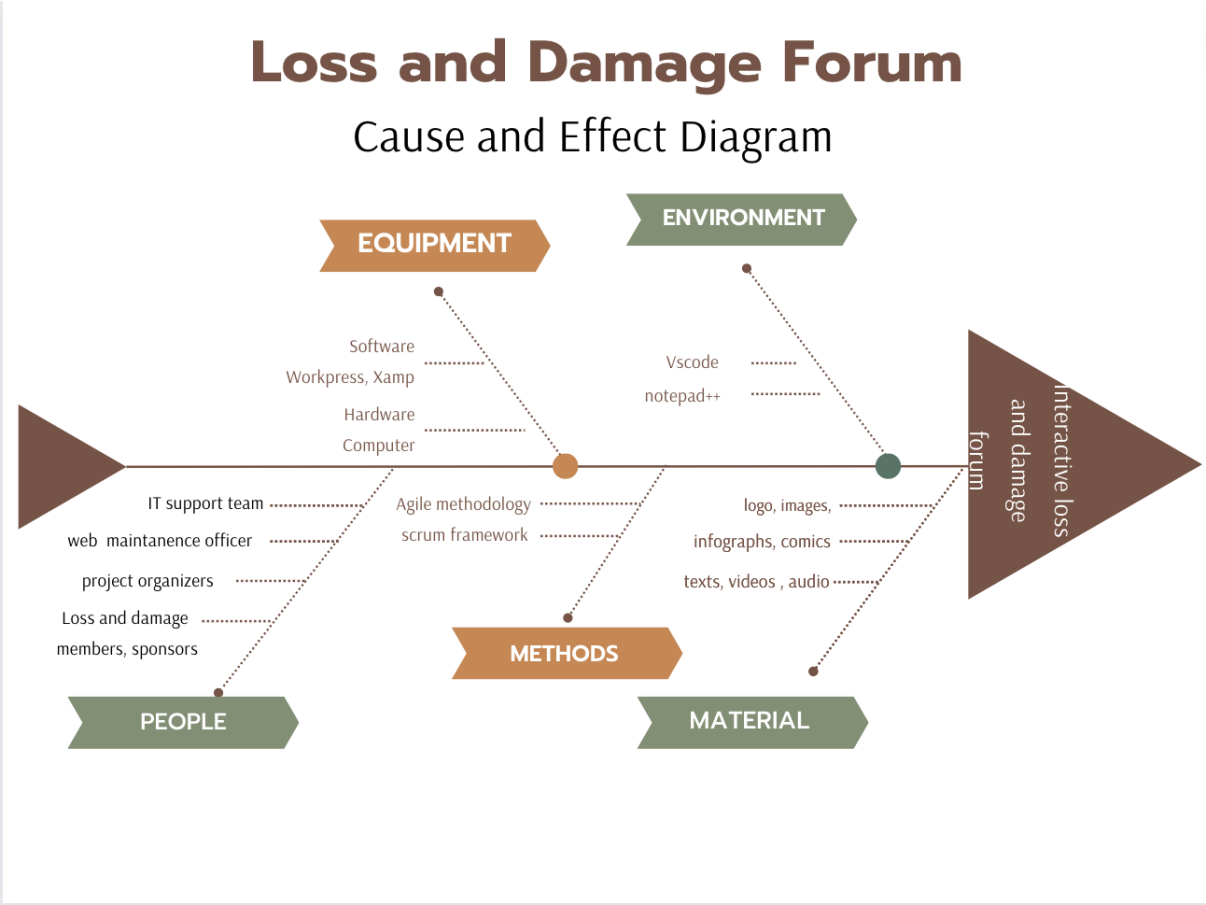

Figure 5.10: Fishbone Diagram.

UML Diagrams:

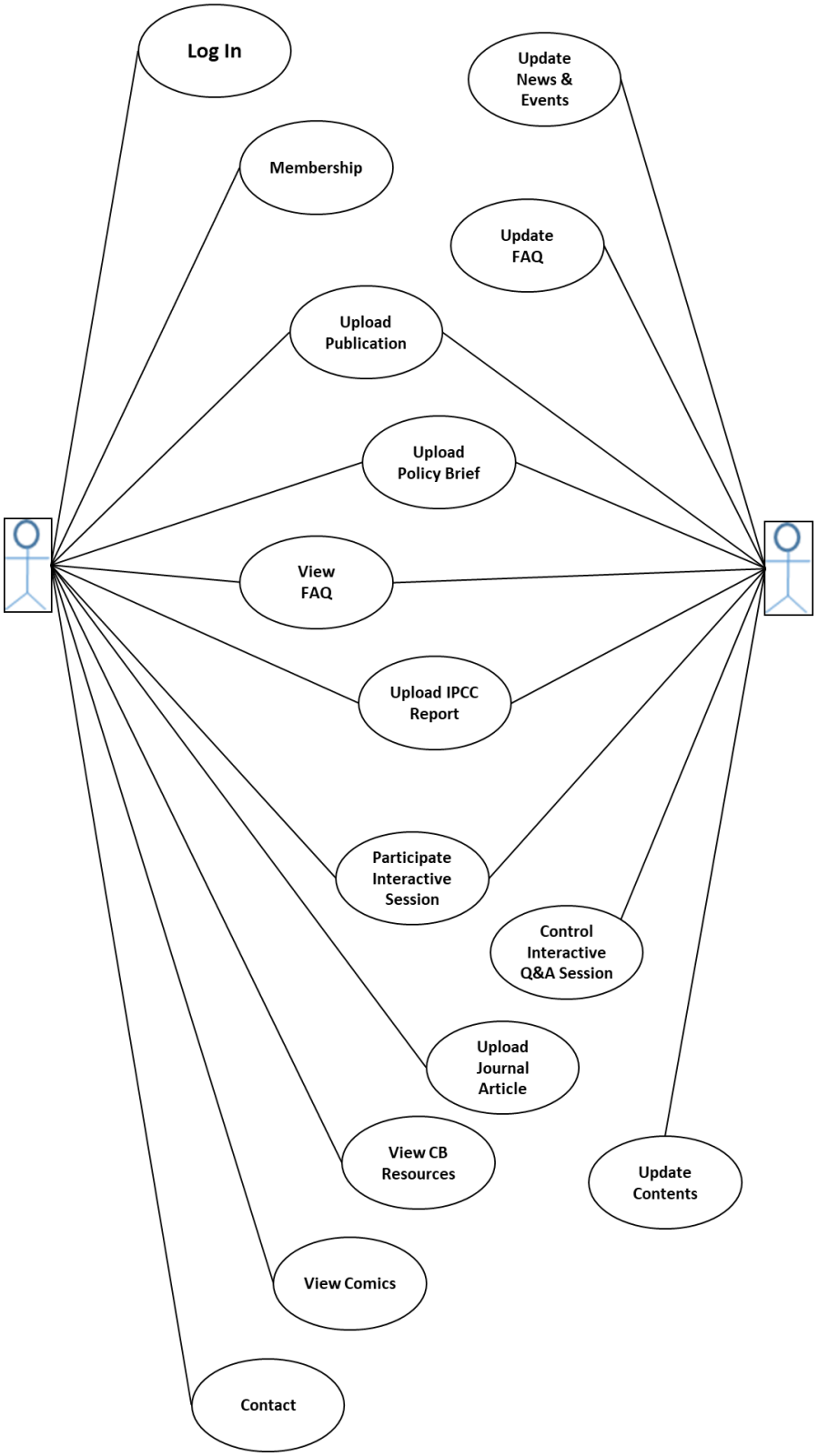

Figure 5.11: UML Diagram

5.8 Testing

The "Loss and Damage Forum" is currently under construction. The website looked unorganized throughout the first few phases since there were so many tabs which needed to be categorized. We needed to tone down the amount of information in one page. Throughout the course of development we figured we could make dropdowns for some of the tabs as they belong in the same category. During testing the webpage had some server issues as well.

Chapter 6

Results & Analysis

Developing an interactive Loss and Damage Forum (LDF) which is a collaborative platform and virtual workspace where resources and tools are shared among a group of practitioners, researchers and decision makers across the world, with a prime focus of connecting local to global, to support and address climate change induced loss and damage.

6.1 Main Features of this Forum:

- To create a knowledge hub and an integrated platform to connect local to global
- LDF is centered around discussion, creating a knowledge hub, having a searchable archive of loss and damage resources, and an integrated instant discussion active board, etc
- LDF aims to create a unified workspace where team members regularly communicate, share their knowledge and work together
- Establish L&D Library (Policy Brief, Journal Articles, Reports, Blogs, Book Chapter)

6.2 Challenges:

- As this Forum scrap relevant content form different sources and dynamically present on this LnD forum pages, it have some limitation as now many of the website set preventing tools to block web scraping and robot exploring to protecting their site.
- For filtration and demographic option it depending on GIS tools if the GIS tools server side having any error that option also impacted.

6.3 Findings and Learning

Working with this project I have found some new technical terms and different type of work. I have learnt about web scraping and how its work, possible using of it and generating idea as well. Learnt about Geographic Information system (GIS) and web features of modern GIS tools also using of it.

Working with this forum help me to different using of web programming also enriched my knowledge and good understandings various web tech. There is also server side working exploring opportunity help me to know how that works to run portal and how to configure client site server.

Chapter 7

Project as Engineering Problem Analysis

7.1 Sustainability

Loss and Damage Forum (LDF) is a virtual workspace where resources and information shared though online. As people are now more convenient and use to digital environment this forum will be
Added a great advantage to collaborating each other.

7.2 Environmental and Social Effects

This forum helps people to understanding about Loss and damages and alert forth coming warning which helps to take precaution environmental threats. Also this LDF forum plays an awareness build up tools to tacking climate changes and protect our environments.

7.3 Summary of the project

By following the task, I have appropriately instigated all the project requirements and its works perfectly. I worked on this project for about six months, during this time I have implemented many things in this project. I have worked in many fields while doing this project. I have done the engineering part of this system very nicely which can be understood by looking at our documents. I have described all kinds of things in a very stunning way here such as software architecture design, literature analysis, using different methodology, diagrams etc. Here the project standards are measured by means of different categories of assessment techniques

7.4 Goal of the project

- To create a knowledge hub and an integrated platform to connect local to global
- LDF is centered on discussion, creating a knowledge hub, having a searchable archive of loss and damage resources, and an integrated instant discussion active board, etc.
- LDF aims to create a unified workspace where team members regularly communicate, share their knowledge and work together
- Establish L&D Library (Policy Brief, Journal Articles, Reports, Blogs, Book Chapter)

7.5 Success of the project

The success of each project depends on the acceptance of its respective users and we've been very successful in bringing it to our users around the world. I would like to say that we have done all these fields to fulfill the requirements of this project. I have trying to meet all the required objectives to develop this forum. I have developed a forum through which any interested user to find an information with interactive way. Lastly, I can say that I have been able to fulfill all the objectives in a very efficient way and that is the main success of our project.

7.6 Value of the project

This interactive forum will be act as a virtual workspace where resources and tools are shared among a group of practitioners, researchers and decision makers across the world, with a prime focus of connecting local to global, to support and address climate change induced loss and damage.

Chapter 8

Lesson Learned

8.1 Problems Faced During this Period

I learned a lot and gained practical knowledge during my internship. Working with my assigned project (the LDF forum development) I have learned wide range of issues, some are technical, strategic and organizational as well. All the issues were resolved with the help and support from my supervisor, faculty, course lessons, and the internet. I have learnt a lot about office environment, professional life, and colleague behavior. Being in a professional life it has been great experience to me.

I would like to share few points I learned during my internship period below:

- Climate Change and its impact (as my worked organizations core business is climate change)
- Web scraping and how it works
- Geographic Information system (GIS) and tools using modern web apps
- Various type of publication in research world
- Activities of climate changes issues around the world
- Importance of coordination in the work environment
- Understanding the difference between theoretical knowledge and practical world
- Less working knowledge on required programming
- Review on discussion
- How to set filtration country wise
- Organize various type of contents

8.2 Solution of those Problems

- Enriched my programming knowledge and web tech
- Establishment of forum Review system
- Create country profile with specific tagging
- Mapping of contents and distribution system.

Chapter 9

Future Work & Conclusion

9.1 Future Works

This forum has a lot of potential in the future. There will be many updates needed in future for users both (for forum user and the ordinary data exploration user). Forum will be look more attractive design and smooth functionality also need to do admin panel more beautiful so that admin can maintain everything efficiently. Will also improving the GIS part and geo location related works.

9.2 Conclusion

To develop this project ‘LDF’ successfully I have tried my best. The overview of the entire documentation contains the goals and the success inside this section. This section also defines implementing knowledge and project values. I have faced many problems during the development and my mentor helped me to overcome the situation. Many more features are not done yet for the short time of the project that will be developed in the next. Here I outlined my summary of the total work such as the main goal, my experience, project value and lots of things. The full project will be very much benefitted for the students.

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An Undergraduate Internship on

Designing and Developing Interactive Forum for Loss and Damage Program

By

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Autumn, 2022

Consent from Supervisor

The student modified the internship final report as per the recommendations made by her academic supervisor and panel members during and before final viva, and the department can use this version for archiving as well as the OBE course material for CSE499.

Sabrina Alam

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