

MILESTONE 4

SOLUTION SEEKERS



PREPARED BY :

Wanatda Phengphonekeo, Bradley Pike, Irah Loreto,
Nate Lapointe, Robee Lou Diaz

**NOVEMBER 17,
2023**

 Lethbridge, Alberta

TABLE OF CONTENTS

Team Introduction	3
Client Introduction	5
System Model	6
Entity Relationship Diagram (ERD)	7
Descriptions of each business component, role, and purpose.	8
Business Rules	10
Data Dictionary	11
Lessons Learned	18
Client Signage	28

OUR TEAM

“SOLUTIONS BY EVERY BYTE”

BRADLEY PIKE
CONTACT REPRESENTATIVE
LEAD

Bradley Pike serves as our main point of contact between the client and our team. He is responsible for coordinating meetings, as well as building a strong client relationship.



WANATDA PHENGPHONEKEO
DOCUMENTATION LEAD

Wanatda Phengphonekeo handles documentation. She is responsible for project reports, project updates, UX design, as well as the documentation between the client.

OUR TEAM

"SOLUTIONS BY EVERY BYTE"

NATE LAPOINTE TEAM LEAD

Nate Lapointe guides the team by ensuring that all members are on track with the client's goals. He is also first to resolve any team conflict.



IRAH LORETO HARDWARE SPECIALIST

Irah Lorteo specializes in hardware related tasks. He focuses on the technical side of the system, ensuring everything runs smoothly.

ROBEE LOU DIAZ PROGRAMMING SPECIALIST

Robee Lou Diaz is responsible for the development of our system. He specializes in programming and coding. Robee guarantees our project concept comes to life.



ABOUT OUR CLIENT

Stephen Graham is a long time instructor at the Lethbridge College.

He teaches multiple courses in the Computer Information Technology program.

More specifically, he specializes in managing practicum programs for his students in the CIT 2271 - Field Work course.

Stephen's Business involves connecting students with employers for co-op work experiences, managing agreement forms, timesheets, and self evaluations.

Our team, Solution Seekers, are students of the Lethbridge College and are assigned to closely work with Stephen to develop a practicum tracking system tailored to his business needs.

- 📍 3000 College Dr. S, Lethbridge, AB T1K 1L6
- ✉️ Stephen.Graham@lethbridgecollege.ca
- 📞 403-320-3200 ext. 5794



SYSTEM MODEL

In this milestone, we will go over our client's system model through the use of diagrams, text, and other elements to help us demonstrate the system.

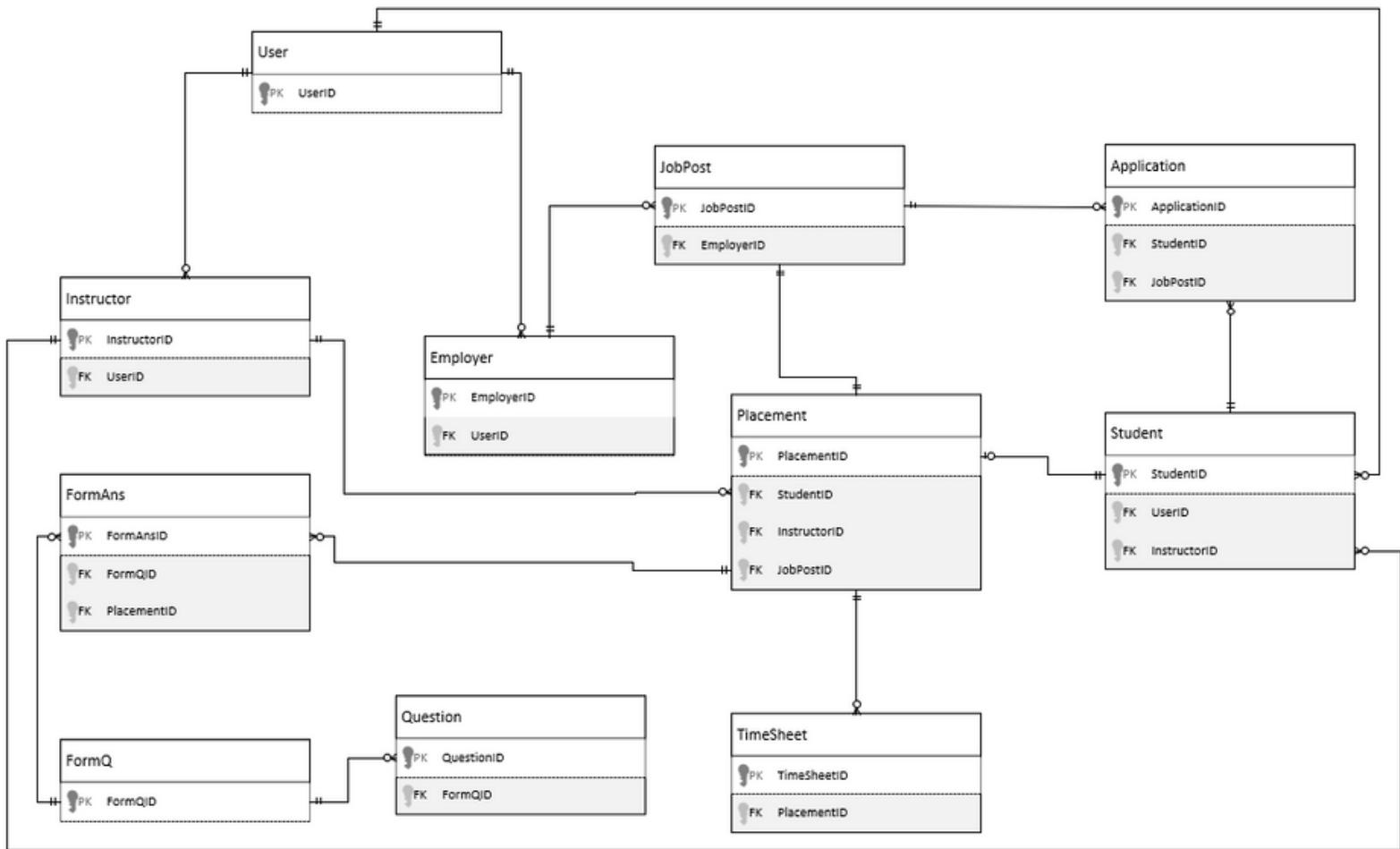
A System Model can be represented using:

- **Entity Relationship Diagram (ERD):** A more structural model that demonstrates the organization of the system.
- **Business Rules:** Specific rules that define how the system will behave.
- **Data Dictionary:** A reference guide that helps everyone understand what data the system uses.

Data Dictionaries are extremely useful for those who are new to using the system, and need to understand all the terms.



ENTITY RELATIONSHIP DIAGRAM (ERD)



Here is our ERD, at the top left corner you will notice the **Users** entity is a parent role to the: **Students** looking for a practicum, **Instructors** overseeing the practicum process, and **Employers** offering a practicum placement.

- **Users** sign in to the system, and based on their role, have access to their designated dashboard.
- **Students** can view **Job Posts** made by **Employers** and apply to them through **Applications**.
- Once a **Student** is accepted for a job, a **Placement** is created which connects the student, the employer, the instructor, and the job post together.
- During their **Placement**, **Students** can track their practicum hours worked through the use of **Time Sheets**.
- **Instructors** have the ability to create forms with specific **Questions** that **Students** need to answer. Once the responses are submitted, they are automatically associated with the **Student's Placement**.

DESCRIPTION OF EACH BUSINESS COMPONENT, ROLE AND PURPOSE

USER COMPONENT

Role: Handles the authentication for all system users.

Purpose: Manages the login credentials of different user types (Instructor, Employer, Student), as well as the access

STUDENT COMPONENT

Role: Represents the students seeking practicum opportunities.

Purpose: Students are able to manage their profiles, apply for jobs, and submit timesheets.

INSTRUCTOR COMPONENT

Role: Represents the instructors or admins that manage the practicum program.

Purpose: To manage the approval of job postings, student applications, timesheets, and forms.

EMPLOYER COMPONENT

Role: Represents the businesses that offer students a practicum placement.

Purpose: To provide a practicum opportunity for students

JOB POSTING COMPONENT

Role: Employers have the ability to upload practicum positions.

Purpose: To allow employers to post job postings, as well as manage job openings that students can apply for.

TIMESHEET COMPONENT

Role: Used by students to log hours worked during their placement.

Purpose: To document the student's work hours for approval by the instructor or employer to ensure hours are recorded accurately.

DESCRIPTION OF EACH BUSINESS COMPONENT, ROLE AND PURPOSE



APPLICATION COMPONENT

Role: Submission and tracking of applications.

Purpose: Students are able to apply for job posts and track the status of their applications



FORM QUESTION (FORMQ)

Role: Specifies the questions included in each form.

Purpose: Lists all the questions you can use in the forms



PLACEMENT COMPONENT

Role: Recording the student's practicum placement with an employer.

Purpose: Track the progress of each practicum placement between the student, employer, and instructor.



FORM ANSWER (FORMANS)

Role: Records answers provided by users from the form questions.

Purpose: To store user responses for each question, allowing us to collect and store that information from the forms.



QUESTION COMPONENT

Role: Store questions that will be included in forms.

These could be questions that Instructors want students to answer, or questions for students to fill out for their practicum requirements.

Purpose: Provide an organized way to manage all the different questions associated with all the different forms. This will make it easier to add, update, or remove questions as needed.

BUSINESS RULES

*Refer to the ERD if necessary.

User can have 0 to many Instructors
User may have 0 to many Students
User can have 0 to many Employers
Instructor can have 1 User
Instructor can post 0 to many Placements
Instructor can manage 0 to many Students
Employer must have 1 User
Employer can create 0 to many JobPost
Student may have 1 User
Student have 1 Instructor
Student can have 0 or 1 Placement
JobPost has 1 Employer
JobPost can have 0 to many Application
Application should have 1 Student
Application is for 1 JobPost
Placement can have 1 Student
Placement has 1 Instructor
Placement must have 1 JobPost
Placement can have 0 to many FormAns
Placement can have 0 to many TimeSheet
FormAns has 1 Placement
FormAns is for 1 FormQ
FormQ can have 0 to many FormAns
FormQ has 0 to many Question
Question is for 1 FormQ
TimeSheet is for 1 Placement

DATA DICTIONARY

User

Attribute Name	Description	Data Type	Format/Input Mask	Required (Y/N)	PK or FK	FK Ref Table	Length	Sample Data
UserID	User Unique Identifier	Auto number		Y	PK		5	1,2,3,4.....
UserType	Type of User	Short Text	Instructor, Employer, Student	Y			10	Student
UserName	Name of User	Short Text		Y			15	OngBob
Password	Authentication	Short Text	Must have 8 characters with a symbol, number, uppercase, and lower case letter.	Y			20	!88Analysis

Instructor

Attribute Name	Description	Data Type	Format/Input Mask	Required (Y/N)	PK or FK	FK Ref Table	Length	Sample Data
InstructorID	Instructor Unique Identifier	Auto number		Y	PK		5	1,2,3,4....
UserID	User Unique Identifier	Auto number		Y	FK	User	5	1,2,3,4....
InsName	Instructor Name	Short Text		Y			50	Stephen Graham

DATA DICTIONARY

Employer

Attribute Name	Description	Data Type	Format/Input Mask	Required (Y/N)	PK or FK	FK Ref Table	Length	Sample Data
EmployerID	Employer Unique Identifier	Auto number		Y	PK		5	1,2,3,4.....
UserID	User Unique Identifier	Auto number		Y	FK	User	5	1,2,3,4....

Student

Attribute Name	Description	Data Type	Format/Input Mask	Required (Y/N)	PK or FK	FK Ref Table	Length	Sample Data
StudentID	Student Unique Identifier	Auto number		Y	PK		5	1,2,3,4....
UserID	User Unique Identifier	Auto number		Y	FK	User	5	1,2,3,4....
InstructorID	Instructor Unique Identifier	Auto number		Y	FK	Instructor	5	1,2,3,4....
StuName	Student Name	Short Text		Y			50	John Doe
Email	Email Address	Short Text	username@domainname	Y			50	johndoe@lethbridgecollege.ca
Resume_Path	Resume Location	Long Text	drive\folder\filename	Y			200	C:\path\file.txt '\\server\share\file.txt

DATA DICTIONARY

Job Post

Attribute Name	Description	Data Type	Format/Input Mask	Required (Y/N)	PK or FK	FK Ref Table	Length	Sample Data
JobPostID	JobPost Unique Identifier	Auto number		Y	PK		5	1,2,3,4.....
EmployerID	Employer Unique Identifier	Auto number		Y	FK	Employer	5	1,2,3,4....

Application

Attribute Name	Description	Data Type	Format/Input Mask	Required (Y/N)	PK or FK	FK Ref Table	Length	Sample Data
ApplicationID	Application Unique Identifier	Auto number		Y	PK		5	1,2,3,4....
StudentID	Student Unique Identifier	Auto number		Y	FK	Student	5	1,2,3,4....
JobPostID	JobPost Unique Identifier	Auto number		Y	FK	JobPost	5	1,2,3,4....

DATA DICTIONARY

Placement

Attribute Name	Description	Data Type	Format/Input Mask	Required (Y/N)	PK or FK	FK Ref Table	Length	Sample Data
PlacementID	Placement Unique Identifier	Auto number		Y	PK		5	1,2,3,4....
StudentID	Student Unique Identifier	Auto number		Y	FK	Student	5	1,2,3,4....
InstructorID	Instructor Unique Identifier	Auto number		Y	FK	Instructor	5	1,2,3,4....
JobPostID	JobPost Unique Identifier	Auto number		Y	PK	JobPost	5	1,2,3,4....

Question

Attribute Name	Description	Data Type	Format/Input Mask	Required (Y/N)	PK or FK	FK Ref Table	Length	Sample Data
QuestionID	Question Unique Identifier	Auto number		Y	PK		5	1,2,3,4....
FormQID	Form Question Unique Identifier	Auto number		Y	FK		5	1,2,3,4....
QuestionText	Question Details	Long Text		Y			100	Did you enjoy your practicum experience?

DATA DICTIONARY

FormAns

Attribute Name	Description	Data Type	Format/Input Mask	Required (Y/N)	PK or FK	FK Ref Table	Length	Sample Data
FormAnsID	Form Answer Unique Identifier	Auto number		Y	PK		5	1,2,3,4....
FormQID	Form Question Unique Identifier	Auto number		Y	FK	FormQ	5	1,2,3,4....
PlacementID	Placement Unique Identifier	Auto number		Y	FK	Placement	5	1,2,3,4....
Answer	Response to Question	Long Text		N			400	Yes, based on my experience... .

DATA DICTIONARY

FormQ

Attribute Name	Description	Data Type	Format/Input Mask	Required (Y/N)	PK or FK	FK Ref Table	Length	Sample Data
FormQID	Placement Unique Identifier	Auto number		Y	PK		5	1,2,3,4....
FormName	Employer Unique Identifier	Short Text		Y			50	Evaluation Form



DATA DICTIONARY

TimeSheet

Attribute Name	Description	Data Type	Format/Input Mask	Required (Y/N)	PK or FK	FK Ref Table	Length	Sample Data
TimeSheetID	Time Sheet Unique Identifier	Auto number		Y	PK		5	1,2,3,4....
PlacementID	Placement Unique Identifier	Auto number		Y	FK	Placement	5	1,2,3,4....
Date	Specific Day	DATE	MM/DD/YYYY	Y			10	02/15/2024
StartTime	Start of Shift	DATETIME		N			11	09:30:55 AM
EndTime	End of Shift	DATETIME		N			11	05:00:00 PM
Hours	Hours Completed for the Day	Number		N			2	7
Description	Details of the Job	Long Text		N			200	Debugging of Form App

13/10/23

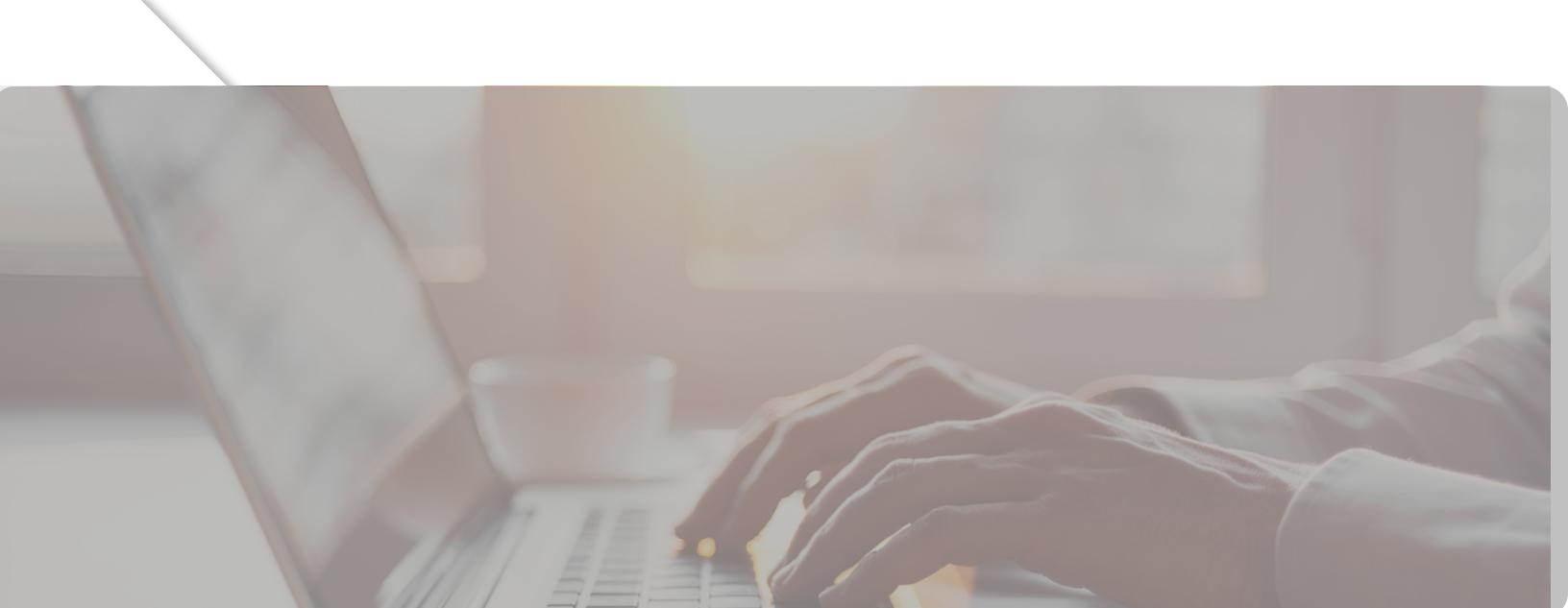
SOLUTION SEEKERS

LESSONS LEARNED

SOLUTION SEEKERS 

P R E P A R E D B Y

Wanatda Phengphonekeo, Robee Lou Dia
Bradley Pike, Nate Lapointe, Irah Loreto



INTRODUCTION

CANVA

For our documentation we have chosen to use Canva to record all of our Lessons Learned.

Each member will be sent a shared link, from there they will be able to contribute to the document.

Every team member is encouraged to participate.

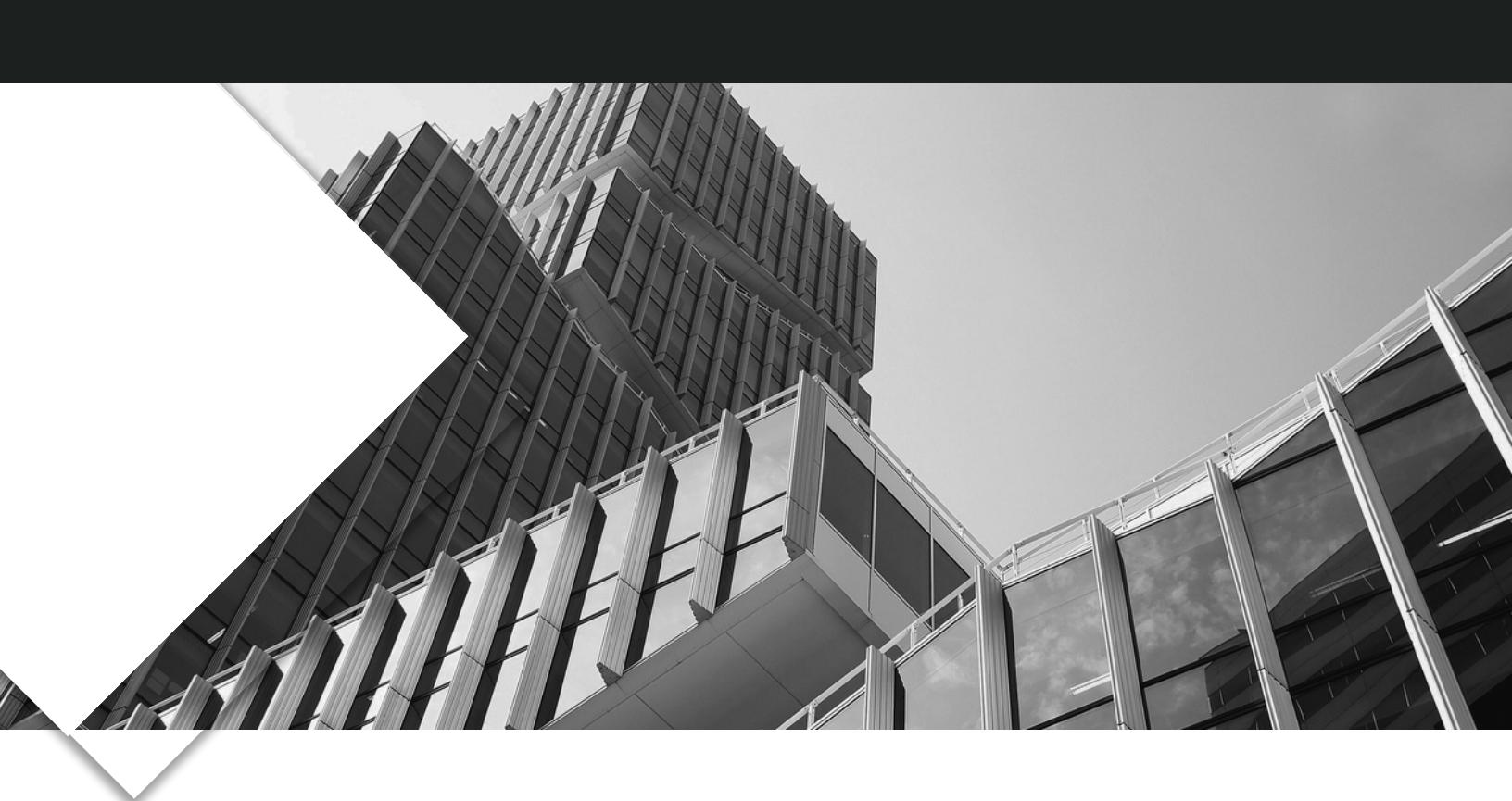


WELCOME

At Solution Seekers, we invite you to view our Lessons Learned document. This document is a reflection of our team's experiences throughout the semester.

Lessons Learned will allow us to identify what went well, and what challenges we faced throughout our project. Ideally we want to avoid repeating mistakes, identify successful practices, as well as improve our overall team work skills.

We realize it's important to collectively learn from our successes and mistakes to ensure a healthy teamwork environment, and serve as a self reflection.



TEAM MEMBERS

2023

STAFF

1

Wanatda Phengphonekeo

Documentation Lead

wanatda.phengphonekeo@lethbridgecollege.ca

2

Robee Lou Diaz

Programming Specialist

robee_lou.diaz@lethbridgecollege.ca

3

Bradley Pike

Contact Representation Lead

bradley.pike@lethbridgecollege.ca

4

Nate Lapointe

Team Lead

nate.lapointe@lethbridgecollege.ca

5

Irah Loreto

Hardware Specialist

irah.loreto@lethbridgecollege.ca

KEY TAKEAWAYS

**For reference, below is a brief and visual description of what the Lessons Learned document will consist of.*



DATE

Each member must enter the date starting in order from DD/MM/YY



ENTERED BY

Enter the name of the group member submitting their Lesson.



MILESTONE

Indicate the Milestone number that the Lesson centres around.



LESSON

Include a brief description of the lesson that was learned in that specific Milestone

SOLUTION SEEKERS

KEY TAKEAWAYS

LESSON TYPE



Imply whether the lesson was an academic, personal, or technical issue. Be sure to keep it short and concise when deciding on the lesson type.

IMPACT



Discuss the impact of the Lesson that was submitted. What was the impact on your team? How has it impacted your personal experience? Feel free to elaborate.



RECOMMENDATION / COMMENTS

Record any key areas that may need to be improved on. Express any growth or achievements. Or perhaps suggest any changes that need to be addressed.

Date DDMMYYYY	Entered By:	Miles tone	Lesson	Lesson Type	Impact	Recommendation / Comments
------------------	-------------	---------------	--------	-------------	--------	------------------------------

*Template for reference



AVOID REPEATED EXPERIENCES

When a team member describes their experience, here are a few topics to consider to help avoid repetition. Each lesson should be a unique experience of itself.

- Communication
- Time Management
- Client Needs
- Quality Assurance
- Decision-Making
- Adaptability

IMPROVE TEAM PERFORMANCE

As a team, we are committed to incorporating all experiences into our project. This is an ongoing learning experience, and we plan to improve our team performance using methods such as:

- Additional Training: Spending the time to improve any skills in areas that our team needs.
- Time Management: Understanding the importance of deadlines and work contribution.
- Problem-Solving: Addressing concerns in our project early on in order to resolve solutions quickly.
- Effective Communication: Each member showing up and participating with frequent check-ins.



CONCLUSION

Each Milestone will have all team members contributing to the Lessons Learned document.

It's important to follow the template layout for proper procedure. Everyone's experience must be unique, and not a repeat of previous lessons.

Milestones will have new experiences that members may not be familiar with. These could be learning new software, coding languages, or working with unfamiliar charts and graphs.

Altogether we plan to review our lessons and share solutions on issues that need improvement, or achievements that deserve recognition.

We welcome you to follow along on our Lessons Learned journey!



LESSONS LEARNED

Date DD/MM/YYYY	Entered By:	Milestone	Lesson	Lesson Type	Impact	Recommendation / Comments
14/11/2023	Wanatda	4	Wednesday after class I talked to Tim about our ERD. Initially I had created one, and just wanted his input on it. But after talking with Tim, we worked together to improve the ERD for our system. We ended up restructuring the ERD completely, and in the end I had a better understanding of our improved ERD than I had going in. This was so helpful because throughout this Milestone I really struggled with this.	Academic	I feel like our improved ERD is more fluid. The diagram is 10x easier to explain to others, and you can follow it very smoothly. If I had not gone to Tim for advice on our ERD, I think it would have impacted our understanding of our client's ERD.	
20/11/2023	Nate	4	I learnt a lot more about the business' rules, looking at the ERD and figuring out the business' rules defiantly took time and hearing what Tim had to say about them after the presentation helped a lot	Academic	Made a lot more sense with the whole project figuring all that out, with time explaining everything as well gave me a better understanding of everything	
20/11/2023	Bradley	4	Since the last milestone I'm staying a lot more accountable for my own work and making sure I'm prepared for the presentations.	Accountability	I've made a major improvement on clarity and general understanding of the project	
20/11/2023	Irah	4	I learned more on how to become design things better on PowerPoints and become more creative. Learned about ERD more in depth's through my group members and others as well. I became more consistent in my work and have improved my skill as well to benefit the group projects.	Academic	Our new chart is way easier to explain now. Thanks to Tim's advice, it's much clearer, and you can understand it way better. Plus, this taught me that getting feedback from others is important. I'm also trying to get better at making PowerPoint slides so I can explain things even more clearly in the future. Improving my skills for sure and will have better results creating and designing for the group.	
20/11/2023	Robee	4	The most notable lesson that I had on this milestone is creating a Data Dictionary. I tried creating a database before but I learned that having a well-organized and planned Data Dictionary makes the task a lot easier. I also discovered on how to improve wordings for Business rules that will match the Entities involved.	Academic	This will serve as our cornerstone for creating the application and database since we have an idea of information that we need and the metadata and limitations for each attribute.	

LESSONS LEARNED

Date DD/MM/YYYY	Entered By:	Milest one	Lesson	Lesson Type	Impact	Recommendation / Comments
27/10/2023	Wanatda	3	I learned how to make use cases! This was pretty simple to learn in class when we did examples, but when it came to actually integrating them into our project it took me awhile to figure out. Mostly because you have to go through every single step and determine "is it a feature? or is it a valid use case? what is considered pre/post condition?"	Academic	Understanding how to make Use Cases is really important for our team because I had to take into consideration stuff that I might not have accounted for. Not only for documentation sake, but also for when we start coding.	Spending the time to understand what the client wants before making a use case. Also ask for help.
29/10/2023	Robee	3	Review format of documents properly. Be more mindful on the details of deliverables. Communicate better with the team.	Personal	Missed out some specific formatting and properties of data flow diagram. Initiate team discussion for deliverables made for current milestone.	
30/10/2023	Bradley	3	Become more engaged with the project and get clarification when needed. I found myself less engaged due to a busy schedule however when I had free time I found myself focused on the wrong things. I found that creating the deliverables I didn't have a great understanding of the project and should've asked for clarification before the presentation.	Engagement	I found myself not being able to have as much perceived knowledge on the project as I stumbled on words and generally didn't have a great understanding of my portion of the presentation	Ask for help when needed
30/10/2023	Nate	3	During milestone 3 i learnt how taxing this whole process really is. There is a lot of work still ahead and i found having to remind myself to get my work done and to be on track with everything. Also learnt that asking questions to get out the right information and to do the work correct the first time.	Personal	The impact of having to remind myself to get my work done is big because that's time that i could have spent making the project better or brainstorming new ideas, things like that.	Understand the importance of everyday that we work on the project.
30/10/2023	Irah	3	I was in charge of working on the informal presentation. About a half our into it, my computer crashed and I forgot to save my progress. This really sucked because I had most of the slides done with animations and themes sorted out.	Technical	Lost a good portion of our groups presentation. Thankfully I was working on it a couple days before it was due, so I was able to recover most of it. All in all it just delayed me for a couple hours from completing it.	Always save your progress, or at least turn on the auto-save function.

LESSONS LEARNED

Date DD/MM/YYYY	Entered By:	Milestones	Lesson	Lesson Type	Impact	Recommendation / Comments
08/10/2023	Wanatda	2	During the 1st Milestone I felt very rushed into completing all the deliverables. But since going into this 2nd one, I've been slowly adapting to the pace of the milestones. I have been trying to get deliverables done as far in advance and I can, but surprisingly I have not been feeling rushed like I did in the 1st Milestone.	Personal Achievement	I realize it's all about time management, which is something I am not necessarily bad at, but when it comes to GROUP time management, I've found ways to manage it a little bit better so that I'm not stressed. It's different when it's a group project and you have to rely on others for their part, as well as deliver yours in a timely matter.	Adopting better time management skills. Staying on track of Milestone deadlines.
10/10/2023	Brad	2	Throughout milestone one I found it very valuable to schedule group meetings all the time and just get working. It doesn't matter how much time your group mates have, as long as the work is getting done and we all understand the material that's all that matters. Work just needs to get done and I'd much rather be ahead of other groups then waiting for everyone to be available.	Delegation & Meeting Length	Within our 4th meeting we did double the work completed in the 3 meetings prior. This was a result of delegating tasks and meeting for longer periods of time and having group members come and go.	
10/10/2023	Robee	2	For milestone 2, I learned how to use MS Project for managing tasks and deliverables. Additional effort was needed to read the documentation and search the web on how to navigate and use it properly. Before, I thought Agile is just Scrum and Kanban but understanding other Agile methodologies to decide which one to use for our project was essential.	Technical	I am optimistic that our team can make improved recommendations. Become more organized individually and as a team with our project management with these tools and knowledge at hand.	Read documentations. Spend time to learn how to navigate new tools.
10/10/2023	Nate	2	During milestone one i shortly realized that having a schedule and organized plan with everyone in the group was a must and it made it a lot easier to keep track of everything and know what everyone is working on and completed.	Technical	Having a clear schedule and plan helps the group work better together and get things done faster. It also makes sure everyone knows their job and does it well.	Have a calendar and a list for to dos and priorities list for tasks.
10/10/2023	Irah	2	Lesson learned for Milestone 2 on what I have learned is that scheduling my working times to finish projects and assignments is very important. Same goes for Milestone 1. There was some days cramming in work for 10 hours made it easier if I just spread it out and did some things at better times. As well I got to understand more in depth on what my group is good at and what I can contribute to continuing our work.	Technical & Planning	The importance of effective time management and spreading out work over time to reduce stress and improve productivity. Additionally, gaining a better understanding of individual strengths within the group has enhanced collaboration and project contributions.	

THANK YOU

October 30, 2023

Dear Mr. Stephen Graham,

On behalf of Solution Seekers, we thank you for choosing our team to represent you and your business needs.

We are so thrilled to embark on this 6 month long journey with you to transform this project into reality!

To acknowledge your understanding of the contents in this document, please sign below.

We look forward to working closely with you to ensure a successful project.

X

Stephen Graham