Leading University

Department of Computer Science and Engineering

CSE- 2214

LEADING UNIVERSITY

LU Bus Reservation

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30th January, 2022

Recommendation Letter from the Course Teacher

The project entitled *LU Bus Reservation* submitted by the students

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is a part of their Object Oriented Programming Sessional course work.

Signature of the Course Teacher:

Adil Ahmed Chowdhury

Date: 30th January, 2022

Abstract

Among the multitude of advantages offered by Leading University Additionally, there is a significant disadvantage. That is the administration of bus seats and the maintenance of bus schedules. This issue is particularly significant for students returning to varsity. When everyone returns home from the day's tiredness, it is seen that they are forced to stand the entire way without a seat owing to being late for class or for any other cause. Again, it is frequently observed that there are insufficient buses. As a result, the students' misery continues. Students enrolled in a certain route are also required to stand on a frequent basis while end route to varsity. After class, if we ever wish to return without a schedule, we will be unable to catch a bus. As a result, we are forced to wait hours. And this is primarily a result of a lack of organized means. Thus, we may resolve these issues by establishing a well-organized bus reservation system.

So, we developed a project named **"LU Bus Reservation"** & by using this system students will no longer be subjected to hardship.

Acknowledgments

We'd like to convey our heartfelt gratitude to, **Adil Ahmed Chowdhury**, our project supervisor, for his direction of patience, counsel, invaluable assistance, and time during our project. I'd also like to thank the members of my team who assisted with the project and planning. We would also like to thank the Department of Computer Science and Engineering, Leading University, Sylhet 3112, Bangladesh, for supporting this course work.

Dedication

We would like to dedicate our work to all of our Leading University Students.

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CHAPTER 01

INTRODUCTION

1.1 Background

This report covers the "**Lu Bus reservation**" Project. This is a very simple project in which we used the java object-oriented programming language's File Handling System & Exception Handling System. This system will be extremely beneficial to users because they will be able to do schedule based advance bus reservation, off schedule bus reservation & they'll get route-based seat vacancy update when going to varsity.

It also provides the opportunity to help the students who in future willing to do work on this project or similar idea.

We will discuss further about this project in other sections.

1.2 Motivation

Each project is motivated by something. Due to the initiative's focus on people, our true motivation is to assist those in need. It would be a tremendous accomplishment for us if we could make even a small difference in the lives of people, our society, or our country. When we first visited our university in 2021, we noticed some students waiting for the bus. When the bus arrived, some students ran towards it and reserved seats. While running, some students fall to the ground, while others are unable to find a seat. Then we noticed that some students were simply standing when the bus was full. When several girls are standing on the bus, it's an awkward situation. Additionally, teachers occasionally face the same issue, which causes everyone to feel awkward. Then one of our team members, Nabil, came up with this idea, and we discussed it further before deciding to pursue this project. To alleviate this problem and confusion, we attempted to create this project, which will not only resolve the issue, but also provide additional opportunities for future expansion.

1.3 Objectives

The objectives are:

1. Schedule based advance bus reservation.

2. Off schedule bus reservation.

3. Route based seat vacancy update when going to varsity.

CHAPTER 02

Background Study

The focus of this project is on LU bus reservation issues and solutions.

If students reserve seats in advance, transportation authorities will have a better idea of how many students will be traveling on which route at any given time. As a result, they will be able to prepare an adequate number of buses for that time. Students are thus relieved of the responsibility of securing a bus seat. Students must wait hours for the scheduled bus because there is none available after class ends. Thus, if a sufficient number of students apply for the bus outside of the scheduled hours, the transport authority will be able to provide the bus outside of the scheduled hours in the students' interest. Students who take a particular route (after Subidbazar) to varsity in the morning must almost always stand despite of having 3 route buses going through the same route after Subidbazar. Because they have no way of knowing ahead of time whether any bus seat will be available. Therefore, if the bus driver provides an advance update on whether his bus has an empty seat, those students will easily determine which bus does not need to stop. As a result, they will avoid rushing onto any bus and instead wait for one with empty seats. Due to the fact that this route is used by almost all buses.

2.1 Review Previous Work

We have researched many previous work similar like this such as many online popular bus reservation system sohoj.com, busbd.com etc. Also we have seen many work based on java swing and database. In addition, we enlarged our knowledge about file handling & exception handling. To complete this project, we've studied about other projects like bus reservation system, seat booking system, hotel management system etc.

Also we gather ideas about How to create file , how to read from file , how to store data in file, how to rename and remove files, we also studied about the basic requirements for basic information from many sources like GitHub, YouTube, Udemy, Codeforces, Stack Overflow, Code Project, BitBucket.

CHAPTER 03

Methodology

For this project we had to do our research in two steps. Firstly, we had to collect experiences of the victims as our data for the project. Secondly, we had to surf through internet to find out the solution for similar problems or any existing application with the same concept as our resources for the project. So, we reached out to our friends and other students, gathered their experiences and suggestions. Then started to search the internet for such problem's solution and for similar to application and projects. After collecting all the data we started to create our own project.

As a tool to create the application we used Java to program, File handling to store data and terminologies of Object Oriented Programming like Exception Handling. We didn't have deep knowledge of the mentioned terms so we took help from internet and gathered necessary knowledge.

Reason for using the above mentioned methods are-Java is the best programming language to create such lite applications for all kinds of users. Besides, this project is the course work of our Object Oriented Programming Sessional course and we were taught basic java in it. We did the survey with the students as they're ones who suffer every day.
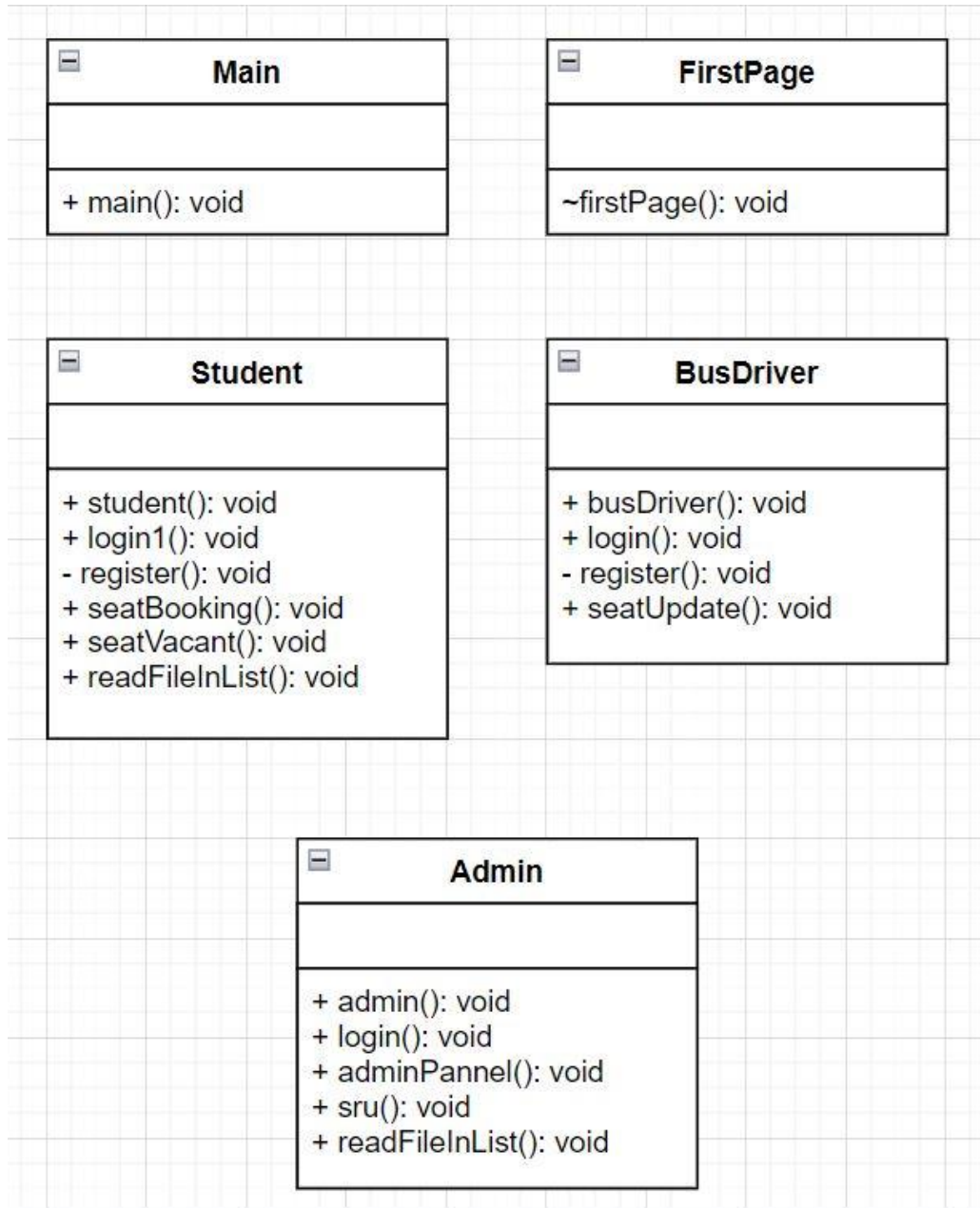
CHAPTER 04

Structural Design

4.1 Class Diagram

Figure- 01: Class Diagram

CHAPTER 05
Limitations & Future Work

5.1 Limitations

"It is failure that guides evolution; perfection provides no incentive for improvement, and nothing is perfect."

Just like that our program also exists with some imperfections. There are also some limitations in our project. In our project we were unable to add update and delete data from file or database system in admin panel for time limitation. Also we don't have enough knowledge about Java Swing, Database so we couldn't expand the features.

As we didn't know how to use JFrame in java so couldn't provide the application type look to our program.

5.2 Future Work

We will extend our project idea when we are ready to use JFrame and can handle database using java we will try to make an upgraded application with our project. Also we'll learn Android Development and Server to create a proper user friendly application so that the students and administration can use it in daily basis. We believe that there is still a lot of opportunity for improvement in this program.

CHAPTER 06
Conclusion

From this project we learned a lot of things. We learned how to do teamwork. We developed our communication and research skills. It helped us to think out of the box and forced us to work outside our comfort zone. We faced many problems while coding but together we discussed about it and solved it with each other's help. It also increased our debugging skills. With the hard work of all the members we completed the project. To sum up, this project is not the end of our great learning period it's a beginning of a new journey with proper motivation for us.

References

[1] "Java BufferedWriter (With Examples)", Programiz.com, 2022. [Online]. Available: https://www.programiz.com/java-programming/bufferedwriter. [Accessed: 30- Jan- 2022].

[2] "How to write to file in Java using BufferedWriter", beginnersbook.com, 2022. [Online]. Available: https://beginnersbook.com/2014/01/how-to-write-to-file-in-java-using-bufferedwriter/. [Accessed: 30- Jan- 2022].

[3] "Different ways of Reading a text file in Java - GeeksforGeeks", GeeksforGeeks, 2022. [Online]. Available: https://www.geeksforgeeks.org/different-ways-reading-text-file-java/. [Accessed: 30- Jan- 2022].

[4] "Exception Handling in Java | Java Exceptions - javatpoint", www.javatpoint.com, 2022. [Online]. Available: https://www.javatpoint.com/exception-handling-in-java. [Accessed: 29- Jan- 2022].