FEASIBILITY STUDY REPORT

2.1 INTRODUCTION:

Academic Schedule Management System allows to handle all the required academic information of an educational organization dynamically and effectively. The main objective of this project is to maintain the whole academic schedule as an automated and digital one considering its safety and minimal costs where the existing system is based only on the class routine.

Through this document, we are going to study the feasibility of our project. Feasibility study is a study made before committing to a project. It is primary and the most important thing in the development of software project. It will help us to determine whether this system is worth solving and to decide whether to proceed with the project or not.

Our report covers seven sections. Section 2 discusses about the background of the project, which contains the limitations of existing system. The problems and its solutions are discussed in section 3, named as outline of software project. Section 4 is the methodology which involves discussion on analysis method for feasibility study. Then major possible two alternatives are discussed in section 5 named as overview of alternatives. According to the comparisons between the alternatives using clearly defined criteria including their advantages and disadvantages, a recommendation of one alternative is made in section 6 emphatically. Finally, Section 7 contains conclusion with final result of the comparison of the alternatives. This analysis is needed to show that the system will be beneficial and profitable.

2.2 BACKGROUND:

The existing class routine management system contains only the class routine. Secondly, the existing system for other required information is not enough efficient. It is a manual system, time consuming and not cost-effective. Again, all the data of the academic schedule are stored in papers or files, which remain unsecured. So we need a system which is an efficient, digital, not time consuming and the expected data can be stored in one place like database, more safely. It gives the opportunity to manage all academic information easily and view it digitally. As the system has login system, teachers and students can easily login with their registration id and view the schedule updates. Teachers can update the schedule when it is required. This system will provide a more user-friendly environment. And it will be designed such that the system will capable of meeting the changing needs of the customer.

2.3 OUTLINE of THE PROJECT:

The Academic Schedule Management System is a system which allows users to find out the information of a department of an institution. The outline of the project is given below:

Users: The users of the system are students, teachers, and office authorities.

Problems: By using the existing system, users can not get all academic information. Moreover, the existing system is time consuming. Information are not in sorted form. There is more possibilities of data loss.

Reasons of Problems: As the existing system is developed only with class routine, users can not find any other information. So, they need more time to find out the information manually. As information are saved in hardcopies, there is more chance of data losing.

Tasks Performed: The tasks performed are view of all academic information, insertion of data, updating of data, and deletion of data.

Required Data: The list of the required data are given below:

- Class_routine (Day, Course_code, Course_title, Starting_time, Ending_time, Room_no, Teacher-id);
- Syllabus(Course_code, Course_title, Credit, Hours_week, Teacher-id, Chapter_no, Chapter_name, Book_reference);
- Exam_routine(Exam_day, Course_code, Course_title, Date, Exam_starting_time, Exam_ending_time, Hall_no);
- Teachers_info(Teacher_id, Teacher_name, Designation, Contact_no, E_mail);
- Financial_dealings(Subject, Payment_starting-date, Payment-ending_date, Due_time, Amount, Due_amount)

Data Flow Diagram: A DFD or Data Flow Diagram depicts the flow of data within a system and considers a system as a transformation function that transforms the given inputs into desired outputs. A DFD does not depict the information about the procedure to be used for accomplishing the task.

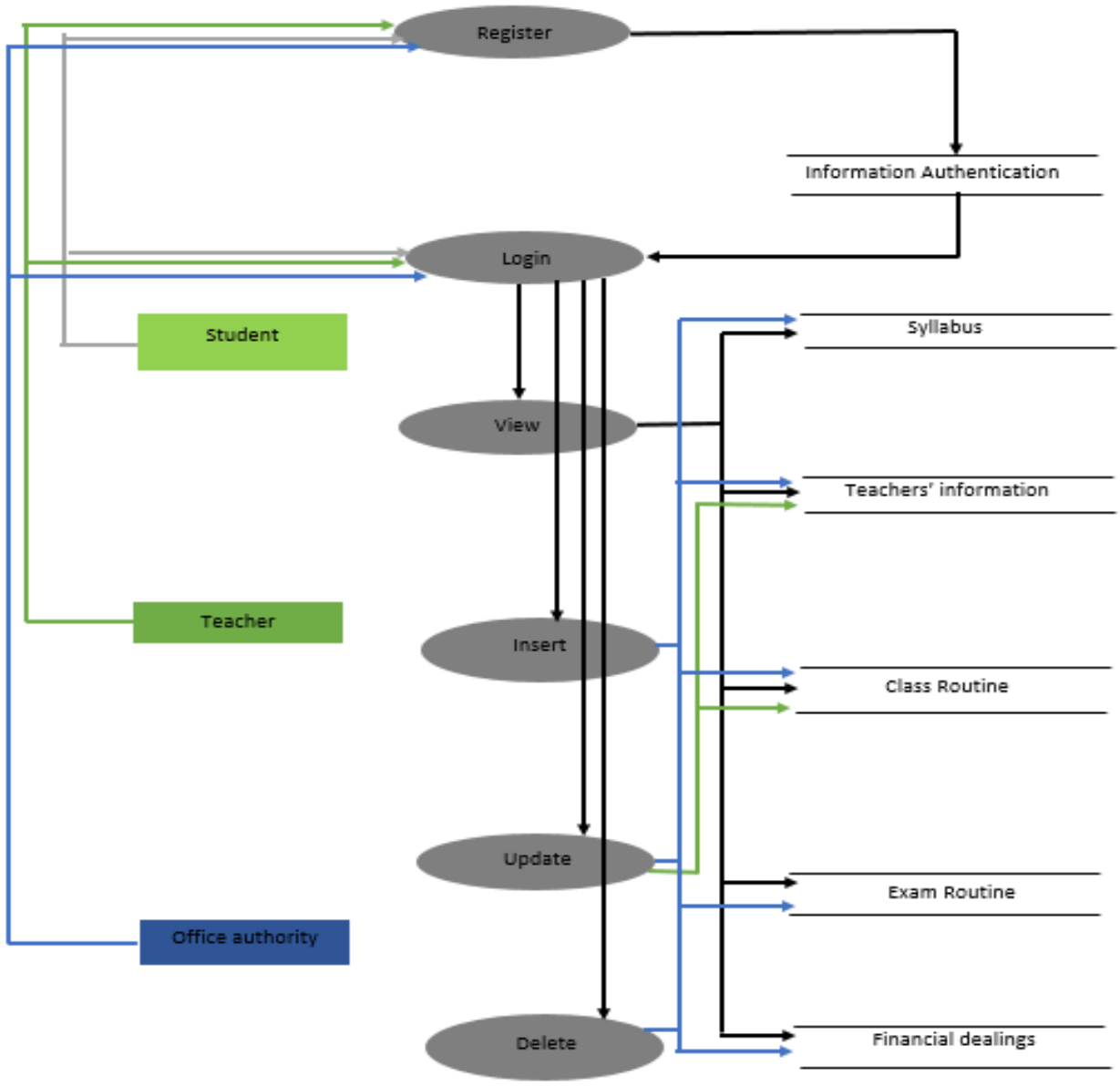

Fig 2.1 : Logical model using DFD(Data Flow Diagram)

2. 4 Method of Analysis/Methodology:

Feasibility study is carried out to select the best system that meets performance requirements. Based on the requirement of the client, we have studied our feasibility study. We have proposed two alternatives –alternative-1(Online version) and alternative-2(Offline version). The main objective of this feasibility study is to determine the solution based on three types of feasibilities: technical feasibility, operational feasibility, & economical feasibility.

Technical Feasibility: By studying technical feasibility, we will be able to know that if the required technology to implement the alternatives is available or not. With specifying the experiment and software, we will be able to convince the user so that the user can process a certain volume of transaction at a particular speed.

Operational Feasibility: This is relevant in human organizational and diplomatic aspects that are available for the project. Operational feasibility is dependent on human resources available for the project and involves projecting whether the system will be used if it is developed or implemented. It is a measure of how well a proposed system solves the problems and takes advantage of the opportunities identified during scope definition.

Economical Feasibility: Economic feasibility is used to evaluate the effectiveness of a proposed system. By conducting the economic feasibility, we can estimate the feedback based on our present investment.

According to the cost which will be the investment on our project we can estimate the feedback of it using formula (i),

$$P = F / (1+i)^n \ldots\ldots\ldots\ldots\ldots\ldots \text{(i)}$$

Here P, F, n, I are present value, future benefit, year of benefit & expected rate of return, respectively.

2.5 OVERVIEW of ALTERNATIVES:

Two alternatives have been proposed for the Academic Schedule Management System which are shown in table (i):

Table (i): List of Alternatives

Serial no	Features	Alternative 1	Alternative 2
01	Online/Offline Version	Alternaive1 is online based academic schedule management system.	Alternaive2 is offline based academic schedule management system.

2.5.1 Overview of alternative 1:

Technical Feasibility: Our system needs only a computer and some open source software packages like a browser, MySQL server and Android Studio. As computer is available to almost everyone and the software packages are open sourced, so we can say that this system is technically feasible.

Operational Feasibility: As we are developing an Android app and android is the mostly used mobile operating system, moreover we will develop a user-friendly environment and provide all

important and useful contents, it will be satisfiable to the users. So the project is operationally feasible.

Investment: The investment of alternative 1 is given in table (ii):

Table (ii): Investment of alternative 1

Serial no	Particular	Cost
01	Hardware Resource	1,20,000|=
02	Data Collection & DBMS	1,00,000|=
03	Software Packages	0|=
04	Developer	3,00,000|=
	Total	5,20,000|=

Economic Feasibility: The cost & benefit of alternative 1(yearly basis) is shown in table (iii)

Table (iii): cost benefit analysis of alternative 1

Serial no.	Cost		Benefit	
	Particular	Amount	Particular	Amount
01	Operational cost	1,00,000|=	From online: Saving from other sources:	2,00,750|= 15,000|=
		Total : 100,000|=		Total : 2,15,750|=

Benefit:

From online= (550*365) = 2, 00,750 BDT.
Saving from other sources = 15,000 BDT.

Net return per year = (2, 15,750-100000) BDT. =1, 15,750 BDT.

Table (iv): payback period analysis of alternative 1

	Saving(thousand)	**Present value (At 10%)**	**Cumulative value**
1	115.75	105.23	105.23
2	115.75	95.66	200.89
3	115.75	86.97	287.86
4	115.75	79.06	366.92
5	115.75	71.87	438.79
6	115.75	65.34	504.13
7	115.75	59.36	563.49

2.5.2 Overview of alternative 2:

Technical Feasibility: Our system needs only a computer and some open source software packages like MySQL server and Android Studio. As computer is available to almost everyone and the software packages are open sourced, so we can say that this system is technically feasible.

Operational Feasibility: As we are developing an Android app and android is the mostly used mobile operating system, moreover we will develop a user-friendly environment and provide all important and useful contents, it will be satisfiable to the users. So the project is operationally feasible.

Investment: The investment of alternative 2 is given in table (v)

Table (v): Investment of alternative 2

Serial no	Particular	Cost
01	Hardware Resource	70, 000|=
02	Data Collection	70,000|=
03	Software Packages	0|=
04	Developer	2,00,000|=
	Total	3,40,000|=

Economical Feasibility:

Table (vi): cost benefit analysis of alternative 2

Serial no.	Cost		Benefit	
	Particular	**Amount**	**Particular**	**Amount**
01	Operational cost	70000|=	Better service and uploading cost: Saving from other sources:	1,00,000|= 10,000|=
		Total : 70,000|=		Total : 1,10,000|=

Net return per year = (1, 10,000-70,000) = 40,000 BDT.

Table (vii): payback period analysis of alternative 2

Year	Saving(thousand)	Present value (At 10%)	Cumulative value
1	40	36.36	36.36
2	40	33.06	69.42
3	40	30.05	99.47
4	40	27.32	126.79
5	40	24.83	151.62
6	40	22.58	174.2
7	40	20.53	194.73
8	40	18.65	213.38
9	40	16.95	230.33
10	40	15.44	245.77
11	40	14.03	259.8
12	40	12.74	272.54
13	40	11.93	284.47
14	40	10.55	290.02

2.6 RECOMMENDATION:

In the above section, we have discussed about economical, operational and technical feasibility of both the alternatives. On the basis of discussion, we need to recommend any one of the two alternatives. So, here some summarized comparison between these two alternatives.

Table (viii): Economical analysis between alternative 1 and 2

Serial no.	**Feature**	**Alternative 1**	**Alternative 2**
01	Technically feasible	Yes	Yes
02	Operationally feasible	Yes	Yes
03	Investment	5,20,000	3,40,000
04	System life cycle	10 years	10 years
05	Return value	563.49	295.02
06	Payback period	7 years	More than 14 years

From table (viii), we can see that both are technically & operationally feasible. But we can see difference in the payback period. In Five years life cycle of the system, payback period of alternative 1 is Five years. On the other hand, it needs more than fourteen years for alternative 2. According to Economic feasibility, we can say that Alternative 1 is most cost effective than alternative 2. Therefore, we recommend alternative 1 as our project plan.

2.7 CONCLUSION:

We have planned two alternatives for our project. Alternative 1 is online-based Academic Schedule Management System and Alternative 2 is offline based Academic Schedule management System. Both are technically, operationally and economically feasible. But by Economical analysis, we have found that, Alternative 1 is more cost effective and efficient than Alternative 2. It is more beneficial than Alternative 2. So finally, we have preferred Alternative 1 for our project.