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Task 1 I [1.1, M1]

Formulate and record possible outline project specification.

Project Specification

Project speciation is document that describes all necessary information about the project. It includes project scopes, goals, project deliverables, project plans etc., PIXELEARTH (n.d.). Project estimation in terms of cost, time and resources is documented in order to give reader clear information about project. Project specification for Samajik College would give detailed information about the project. This document formulates the possible project specification model. This model will be used while preparing outline project specification for the project for Samajik College.

Introduction

Introduction part of the specification gives brief information about document and why it written. This section summarize the outcome of this document. Reader will get idea of what he/she will get from this document.

Aims/Objective/Purpose

This section of the specification document describes aims, objectives and the purpose of the document and project. According to BFUNDED (n.d.) aims describes what project or activity is intended to achieve. Desired outcome or accomplishment from the project is noted here with broad statement. Aims highlight what to be achieved rather than how to achieve.

Object of the project describes how aims are to be accomplished. Generally objects are described in list form. Objects emphasize immediate outcomes of the project. A simple example for project aims and objectives is given below.

Aims:

The project aims to reduce uneducated children from the district.

Objective:

- Provide free education
- Provide high quality learning environment
- Provide scholarships

Scope of Work

Dcosta (2015) writes scope of work acts as a rule book of a project. Any project specification requires clearly described scope of work also referred as SOW. Scope of work section includes description for deliverables, variables that influence the project and project expectations. Scope of work should be concise and clear as it guides various phase of project. Following features are highlighted in scope of work:

- Objectives
- Deliverables
- Variables/Criteria
- Tasks/Works

Projects scope of work has to describe all essential activities need to be done to achieve identified aims and objective of the project. The more specific scope statements are then the more better it works. For example, “Each class will have 40 students” is clear and specific than “Each class will have certain number of students”.

Approach and Methodologies

This module explains how project will be planned, developed, controlled and delivered. Manager must follow suitable approach to complete the project. This section describes project management methodology as well as product development approach and methodology. McConnell (2010) writes, purpose of project mythology is to effectively control and manage the complete project processes to ensure successful completion of project passing specified criteria and within given timeline an budget.

In this section of the specification outline document, approach and methodology used for the project management is explained. From various types of methodologies such as tradition type like waterfall and modern types like PRINCE2, scrum etc. most suitable approach is selected. Each methodology has their own strength and weaknesses hence selection of methodology varies according to nature of the project.

Legislation and Ethics

This section describes projects legal and ethical protocol need to be followed by all stakeholders of the project. Legislation code is associated with legal guidelines whereas ethics code is associated with moral guidelines.

According to Alexis (2013), ethics are really important in project management to gain trust and support from the team. Proper ethics within the project cause positive impact on the productivity. Likewise, proper legal guideline helps to avoid unnecessary legal complications. Effective use of legislation and ethics policy in the project helps to enhance trust among stakeholders, enhance projects image and creates positive working environment.

This section includes following components:

- Project Legal boundaries identification
- Code of conducts
- Agreements and contract papers
- Memorandum of understanding
- Letter of Intent
- Non-Disclosure Agreement (NDA)

Project Sustainability

Project sustainability is planning of developing and successfully delivering project that can return benefits for long period of time (WISEGEEK, n.d.). Project has some accomplishment and benefits. Project sustainability ensures continues delivery of benefits from the project.

This section of the specification explains various types of plans identified to ensure operations, services and benefits during its projected life time. And to ensure project is delivered successfully within the specified timeline. Following plans are described as sustainability plans:

- Risk Management Plan
- Change Management Plan
- Project Fitness
- Reporting Plan
- Line of Communication Plan

Project Fitness for purpose

This section explains how project can satisfy its purpose and ensure delivery of aims and objectives.

Delivered project must satisfy the organizational and business requirement. To ensure project is successful a predefined standard must be met by project. To evaluate predefined standard and standard of developed system, Quality assurance plan is described here.

Project assumption and constraints

Assumptions and constraints are part of life. Each day we make some assumption. For example, we assume how much we can eat before cooking them. And we are bounded by constraints. For example, constraint limit us from buying expensive cloths. Similarly, Project management also has assumption and constraints. These assumption and constrain plays huge role in planning, developing and delivering of the project.

According to Usmani (n.d.) assumption are made based on gathered information and knowledge and experience. It's not necessary for assumption to always be true, but when an assumption fails, project has to suffer. It plays importance role in risk management plan.

Project constraints are limitations such as limitation of cost, technologies, time etc. This section of the project outline specification, various type of project assumptions and constrained are listed:

- Time
- Resource
- Budget
- Technology
- Quality
- Operational

Project Budget

Aeschlimann (2011) suggests that project specification allows to determine potential cost of the project. This will allow to propose cost quote to the client. In this section, budget estimation for the project is analyzed.

Resources

In this section of the paper, resources required for the project is determined and documented. This section will identify:

- Types of labor resources to be used in project
- Number of resource required

- Cost/Rate of the resource etc.

Project timeline

This section will describe estimated time duration of the project. Estimating timeline for the project enables proper planning and management of the system. It analyzes time allocation for the various phases of the project. With project timeline estimation, total project duration, project start and finish day is identified.

Summary

This paper discussed various components of outline project specification in order to formulate and record project speciation. Project specification is a tool that is utilized as document to provide detailed information about project including project introduction, scopes, project plans and project estimations. This paper has produced model for the project specification to be used for Samajik College.

References

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Task 1 II [1.2, D1]

Identify the factors that contribute to the process of project selection.

Feasibility Study

Feasibility study assesses project on different criteria, for example, legitimate, budgetary, operational, social and so forth to comprehend the feasibility of the task. Hofstrand, D. and Holz-Clause, M. (N.D.) recommends, it is study that breaks down the conceivable negative or positive result of the task before contributing time and cash. For instance, if a game Development Company plans to develop a game, they have to perform flexibility study so as to figure out if to start the project or not. Study team investigations who might purchase it, will there be any lawful issue, is it actually conceivable to develop such game, what framework would bolster this project, can this game can cover the all the expenses and result positive benefits. If the result from the investigation is positive, project gets green flag otherwise generally elective arrangements are recommended. This report conducts feasibility study for Samajik College to identify various alternative options and recommend most suitable project.

Purpose

Purpose of this document is to conduct various data collection technique to identify various alternation solutions for Samajik College and recommend most feasible one. Project selection is done through evaluation of various feasibility criteria. Criteria used during project selection for Samajik College is briefly described here.

Various Feasibility Criteria

Economic

Economic feasibility study on a large portion of the cases is most critical criteria considered by organization. Here expense required to develop and available spending budget plan is analyzed. Various investigation is done to perform this study like, cost estimation, cost benefit study etc. If economic study is not conducted properly, number of complications can occur in future. Each project components should be analyzed properly including planning cost, development cost and deployment cost etc.

Technical

Unlike economic, technical feasibility study focuses on technical aspects only. This criteria assesses whether if technologies required to finish such project is accessible. It additionally investigates if specialized labor to create or finish the task can be organized. If all required technical

components such as technical manpower, resources, technical framework is not available for use, alternative option with most feasibility is suggested.

Schedule

In this criteria, critical computation on project timeline period is analyzed. Result from the schedule estimation is critically compared and analyzed with maximum time allowed by client. If evaluated time to finish the task is longer than the real allocated time, it shows undertaking the project is not reasonable. In the event that the allotted time is not enough for project to carryout, recommendation is made to increase time. If time increment is not possible, it is better to leave the project as it will create more complications later.

Fact finding methods Used

Now the feasibility criteria used for project selection and feasibility study is described, it is necessary to apply various data collection method to identify alternative solutions and measurements that will be used to analyze project on basis of feasibility criteria.

Interview

Interview is basically process of fact finding where questions are asked to participant and there answers are recorded as information. Such information is later analyzed according to purpose of interview. To get required data for feasibility study for Samajik College interview method is applied and various teachers, students, administrative staffs, account staffs etc. are taken as participant. Data collected from interview will be analyzed together with data from other fact finding methods.

Questionnaire

Like interview, set of questions is asked to participant. But in this method, questions is distributed in form of printed list of questions. Generally, questionnaire consists of objective questions. Different set of questionnaire is used in Samajik College targeting different stakeholders.

Observation and Document checking

One of the key method used for identifying various measurements and data is observation and document checking. With this method, Samajik College's daily operation, existing structure, student attendance sheets, recipes, official websites etc. were studied. Final outcome after analyzing data from all fact finding is listed in table below.

Fact Finding Summary

Finding	**Description**
Predicted Budget	NRs. 100,000
Predicted Time	3 Months
Organizational Constraints	- Only authorized staffs should able to use the system - Only administrator should have full Access to system
Requirements	- Efficiently manage the student as well as staff's information
- Most of the student/teachers uses Microsoft OS platform	

Possible Solutions

Following alternative solutions are identified based on analyzing the study report of business requirement. Each solution alternatively targets different requirement of the college.

S.N.	Solution Title	Description
1.	An appropriate software solution	Software development to support various activities of college such as student information management, fee management , grade management etc.
2.	Network infrastructure	A domain network to support various equipment of college such as centralized management, network security etc.
3.	Web application	A web based application to manage information and provide services such as assignment, library, blogs etc.

Constraints

Analyzing the final outcome of fact finding, summary table suggests various constraints and assumptions for the project.

- Budget: NRS. 100000 +/- **10%**
- Schedule: 3 Months
- System should able to utilize resources from existing system
- Developed system should be passed through Quality testing and assurance

Outline Specification

Now to critically compare all alternative solutions, budget, and time and resource estimation for each solutions are prepared here.

Budget Estimation [High Level]

College Management System

S.N.	List of activates/Tasks	Man-Day	Rate (NRS)	Amount
1.	Conduct Feasibility Study	30	200	6,000
2.	Produce Outline Specification	40	250	10000
3.	Produce project plan	10	250	2500
4.	Matching Resources effectively to the project	30	200	6000
5.	Implement the proposed project	80	350	28000
6.	Organize, analyze and interpret the outcome of the project	40	250	10000
7.	Interpret and analyze the result in term of original project specification	26	250	6500
8.	Make necessary recommendation	20	600	12000
9.	**Total**			81000
10.	**VAT (13%)**			10530
11	**Grand Total**			91530
Amount in words	Ninety one thousand five hundred and thirty			

Network Design

S.N.	List of activates/Tasks	Man-Day	Rate (NRS)	Amount
1.	Conduct Feasibility Study	25	200	5,000
2.	Produce Outline Specification	35	250	8,750
3.	Produce project plan	15	250	3,750
4.	Matching Resources effectively to the project	35	200	7,000
5.	Implement the proposed project	85	200	12,750
6.	Organize, analyze and interpret the outcome of the project	25	250	6,250
7.	Interpret and analyze the result in term of original project specification	20	250	5,000

8.	Make necessary recommendation	10	600	12000
9.	IT Infrastructures		50,000	50,000
10.	**Total**			95,750
11.	**VAT (13%)**			12447.5
12	**Grand Total**			108,197.5
Amount in words	One hundred eight thousand one hundred ninety seven rupees and five paisa			

Web Application

S.N.	**List of activates/Tasks**	**Man-Day**	**Rate (NRS)**	**Amount**
1.	Conduct Feasibility Study	30	200	6,000
2.	Produce Outline Specification	30	250	7,500
3.	Produce project plan	20	250	5,000
4.	Matching Resources effectively to the project	10	200	2,000
5.	Implement the proposed project	150	200	3,0000
6.	Organize, analyze and interpret the outcome of the project	30	250	7,500
7.	Interpret and analyze the result in term of original project specification	36	250	9000
8.	Make necessary recommendation	20	600	12000
10.	**Total**			79,000
11.	**VAT (13%)**			10270
12	**Grand Total**			89,270
Amount in words	Eighty nine thousand two hundred and seventy			

Time Estimation

College Management System

S.N.	**List of activates/Tasks**	**Duration**
1.	Conduct Feasibility Study	5
2.	Produce Outline Specification	8
3.	Produce project plan	5
4.	Matching Resources effectively to the project	7

5.	Implement the proposed project	25
6.	Organize, analyze and interpret the outcome of the project	10
7.	Interpret and analyze the result in term of original project specification	10
8	Make necessary recommendation	5
Total	70 Days	

Network Design

S.N.	**List of activates/Tasks**	**Duration**
1.	Conduct Feasibility Study	4
2.	Produce Outline Specification	7
3.	Produce project plan	14
4.	Matching Resources effectively to the project	6
5.	Implement the proposed project	24
6.	Organize, analyze and interpret the outcome of the project	9
7.	Interpret and analyze the result in term of original project specification	9
8	Make necessary recommendation	4
Total	72 Days	

Web Application

S.N.	**List of activates/Tasks**	**Duration**
1.	Conduct Feasibility Study	6
2.	Produce Outline Specification	7
3.	Produce project plan	15
4.	Matching Resources effectively to the project	17
5.	Implement the proposed project	35
6.	Organize, analyze and interpret the outcome of the project	8
7.	Interpret and analyze the result in term of original project specification	12
8	Make necessary recommendation	5

Total	100 Days

Resource Estimation

College Management System

S.N.	**List of activates/Tasks**	**Resource Name**	**Type (Work/Cost/ Material)**	**Standard Rate (NRs)**
1.	Conduct Feasibility Study	Labor	**Work**	200
2.	Produce Outline Specification	Analyst	**Work**	250
3.	Produce project plan	Designer	**Work**	250
4.	Matching Resources effectively to the project	Programmer	**Work**	200
5.	Implement the proposed project	Support	**Work**	350
6.	Organize, analyze and interpret the outcome of the project	QA Engineer	**Work**	250
7.	Interpret and analyze the result in term of original project specification	Documentation Expert	**Work**	250
8.	Make necessary recommendation	Expert Support	**Work**	600

Network Design

S.N.	**List of activates/Tasks**	**Resource Name**	**Type (Work/Cost/ Material)**	**Standard Rate (NRs)**
1.	Conduct Feasibility Study	Labor	**Work**	200
2.	Produce Outline Specification	Analyst	**Work**	250
3.	Produce project plan	Designer	**Work**	250
4.	Matching Resources effectively to the project	Technician	**Work**	200
5.	Implement the proposed project	Support	**Work**	200
6.	Organize, analyze and interpret the outcome of the project	QA Engineer	**Work**	250
7.	Interpret and analyze the result in term of original project specification	Documentation Expert	**Work**	250

8.	Make necessary recommendation	Expert Support	**Work**	600
9.	Router	-	**Material**	11,000
10.	Switch	-	**Material**	9,000
11.	Firewall	-	**Material**	7,000
12	Cables	-	**Material**	8,000
12	Servers	-	**Materials**	15,000

Web Application

S.N.	**List of activates/Tasks**	**Resource Name**	**Type (Work/Cost/ Material)**	**Standard Rate (NRs)**
1.	Conduct Feasibility Study	Labor	**Work**	200
2.	Produce Outline Specification	Analyst	**Work**	250
3.	Produce project plan	Designer	**Work**	250
4.	Matching Resources effectively to the project	Programmer	**Work**	200
5.	Implement the proposed project	Support	**Work**	200
6.	Organize, analyze and interpret the outcome of the project	QA Engineer	**Work**	250
7.	Interpret and analyze the result in term of original project specification	Documentation Expert	**Work**	250
8.	Make necessary recommendation	Expert Support	**Work**	600

Evaluation Criteria

Now, outline specification for each potential is identified. To evaluate feasibility of the each solution, they are critically analyzed with constraint defined after fact finding. Solution must comply the constraint to prove its feasibility. Every activity required for project is taken into consideration while estimating expenses, time and resource requirement. One of the key criteria set by organization in terms of constraint was selected system should able to utilize existing system. All identified solutions will able to utilize old system to the some extend. College Management System will support windows platform, network design system will able to use existing computers and web application system will also support both windows platform and existing computer system.

Table below compares each solution with set constraints for the project.

Solution	Comply budget constraint	Comply time constraint	Required Technology (Availability)
College Management System	Yes	Yes	Yes
Network Design	No	Yes	Yes
Web Application	Yes	No	Yes

Most Feasible Project proposal

This report utilized various fact finding techniques to identify potential solutions for the project. Collected data was analyzed to find various measurements such as available budget and time. Budget, time and resource estimations for each solutions were prepared to compare and evaluate most feasible project selection. Various factors that contribute to project selection was identified during this document.

Evaluation criteria to select feasible project shows network system fails to comply budget allocation whereas web application solution failed to match time allocation. Even though these two solutions would be beneficial to organization, planning and implementation of such project is not feasible enough. Meanwhile, College Management System for Samajik College fulfills both budget and schedule constraints. This means organization should go ahead with College Management System.

Reference

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Task 1 III [1.3, D2]

Produce the specification for the agreed project.

Project Title

"College Management System"

Sponsor

Samajik College

Project Background

Samajik college is international college that offer TU education and has head office located in Kathmandu. Branches of college is spread over major cities of Nepal. Samajik now has decided to utilize technology to improve its infrastructure and services. Various data collection methods such as interview, meetings etc. helped to identify three major projects suitable for the college. Between networking system, web system and college management system, proposed system in this proposal has been selected after feasibility study of all alternative solutions.

Current Problems

- College does not have mechanism to properly document all student information
- Keeping record of fee payment in Microsoft excel is not well managed
- College does not have automated history keeping system
- College does not have proper record keeping system for awarding bodies, faculties

Project Benefits

- This project would help college to present itself as modern college.
- Proper management of student information
- Proper management of fee payment and history keeping of payment
- Quick and quality service

Project Objective

These are the main objectives of this project.

- To formulate, Plan, Design and Implement windows based application for "Samajik College "
- To deliver complete project by due date and budget
- Fulfill all requirements stated in SRS document and project deliverable.

Project Deliverable

Completion this project will deliver "College Management system" for Samajik College.

Project Assumption and Constraints

Assumption

- This project itself is component of Large Project.
- Computers used in college are windows based system
- There will be different type of users for the system [Admin/Normal]

Constraint

These are the constraints set by sponsor.

S.N.	Constraint	Description
1	Cost Constraint	Total allocated software budget is 100,000 +/-10%.
2	Time Constraint	Formulate, plan, design and implementation period must not be more than three (3) months.
3	Maintenance	Yearly maintenance expenses should not cross 20,000.
4.	Quality	Developed system should comply with QA standards

Project Legislation and Ethics

This project will use following legislation and ethics.

Legislation

- Project will follow company policy and government mandates.
- There must be legal contractual agreement paper work done for every activities done within project.
- Any unlawful act within project will be punishable according to the law of country.
- Unlawful act will result contact termination.

Ethics (Code of Conduct)

- Any stakeholder are not allowed to (should not) share critical project information to external bodies.
- Any Unethical/illegal activities will not be tolerated such as bribery, bullying etc.
- Stakeholder should deliver correct report to correct person.
- Bullying is strictly discouraged.

Project Sustainability

Project will perform sustainability analysis for the project on regular basis to ensure continuity of project. Project will be handled by project manager who will monitor project progress. Team leader will conduct weekly/monthly motivation meeting to keep employees motivated. Technical coordinator and system analyst will work with other modules of project to ensure sustainability of the system. Various project plan including governance plan, risk management plan, change management plan etc. will be prepared to ensure project sustainability.

Success Criteria

Project success shall be evaluated on following criteria.

- Allocated budged and required budget
- Allocated time and required time
- Allocated resources and utilized resources
- Quality of the system against predefined standards
- Successful delivery of project deliverable.

Approach and methodology

Project Models

Project shall implemented based on waterfall model due to its suitability with the nature of the project. Waterfall model sometimes is also termed as classic life cycle or liner sequential life cycle system. It offers systematic approach while implementing a system. Waterfall model for the proposed system is drawn below (figure 1).

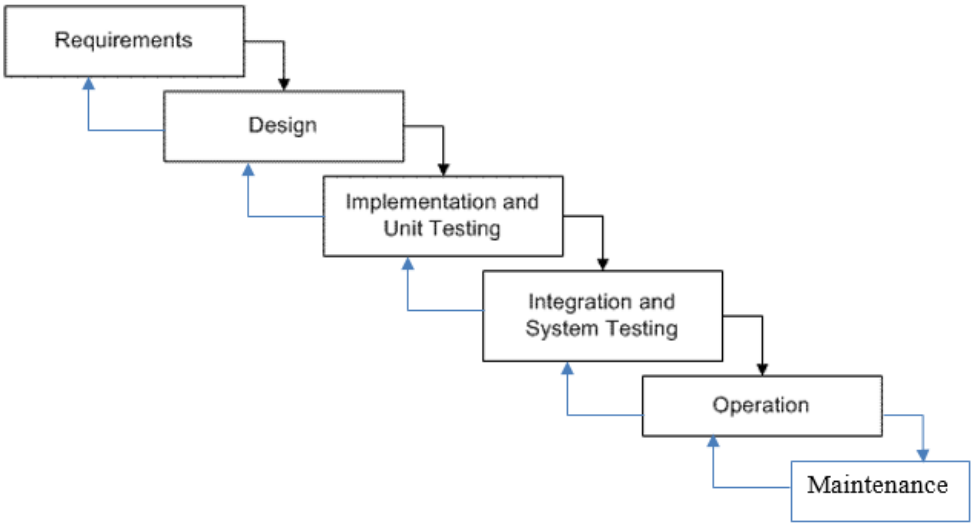


Figure 1Project Model

Benefits of using waterfall for the current system:

- It's easy to understand and implement
- Development cycle of project implementation will be divided into phases
- Only one phase will be carryout at once making things simple
- Each phase is documented
- Since requirements and time is known already, Waterfall is best module for such projects

Tools and Techniques

This project will utilize various tools and technology to plan and manage the project as well as design and implement the actual project. Some of the tool and technologies used in the project and their purpose are as below:

1. MS Project: To plan and manage the whole project
2. WBS: To Break the project into smaller phases
3. Gantt chart: To schedule the project
4. PERT: To evaluate the project performance and estimate time
5. Context diagram: identify and study various entities and boundaries of product
6. Flowchart: understand work flow of product
7. Schema diagram: understand and develop database system
8. Visual Studio: Implement system
9. Windows Form: UI design for system
10. C#.Net language: Programming for the system

Scope of work

Project Scope

- Conduct feasibility study to analyze fitness of project
- Produce Outline specification
- Produce Project plan
- Match resources
- Implement project plan
- Organize, analyze and interpret the outcome of the project
- Interpret and analyze the result in term of original project specification
- Make necessary recommendation for future consideration

Product Scope

- Administrator will able to create and maintain information about student, teacher, faculty, class etc. ***Page Name***
- Teachers will able to upload assignment, documents, images etc.
- Student will able to join class and download/submit assignment
- Any user will have feature of private messaging
- Users will get notification for each file upload, comments, and message.
- Admin will able to send notices related to finance and exams to any user.

Project Estimation

Cost Estimation (High level prediction)

S.N.	List of activates/Tasks	Man-Day	Rate (NRS)	Amount
1.	Conduct Feasibility Study	30	200	6,000
2.	Produce Outline Specification	40	250	10000
3.	Produce project plan	10	250	2500
4.	Matching Resources effectively to the project	30	200	6000
5.	Implement the proposed project	80	350	28000
6.	Organize, analyze and interpret the outcome of the project	40	250	10000
7.	Interpret and analyze the result in term of original project specification	26	250	6500
8.	Make necessary recommendation	20	600	12000
9.	**Total**			81000
10.	**VAT (13%)**			10530
11	**Grand Total**			91530
Amount in words	Ninety one thousand five hundred and thirty			

Resource Estimation

S.N.	List of activates/Tasks	Resource Name	Type	Standard Rate (NRs)

			(Work/Cost/ Material)	
1.	Conduct Feasibility Study	Labor	**Work**	200
2.	Produce Outline Specification	Analyst	**Work**	250
3.	Produce project plan	Designer	**Work**	250
4.	Matching Resources effectively to the project	Programmer	**Work**	200
5.	Implement the proposed project	Support	**Work**	350
6.	Organize, analyze and interpret the outcome of the project	QA Engineer	**Work**	250
7.	Interpret and analyze the result in term of original project specification	Documentation Expert	**Work**	250
8.	Make necessary recommendation	Expert Support	**Work**	600

Time Scale Estimation

S.N.	**List of activates/Tasks**	**Duration**
1.	Conduct Feasibility Study	5
2.	Produce Outline Specification	8
3.	Produce project plan	5
4.	Matching Resources effectively to the project	7
5.	Implement the proposed project	25
6.	Organize, analyze and interpret the outcome of the project	10
7.	Interpret and analyze the result in term of original project specification	10
8	Make necessary recommendation	5
Total		70 Days

Project Approval

Sponsor	**Project Manager**
Signature	Signature
	Date:

Task 1 IV [1.4, M3]

Produce an appropriate project plan for the agreed project.

Introduction

Alternative projects went through various project selection process and most feasible project was selected. Selected project was proposed to organization in term of project specification. Now, as the organization agreed with project proposal, it is must to develop management plan for the project. To analyze and design project plan various tools and technologies have been utilized. This document produces an appropriate project plan for the proposed project.

Work Breakdown Structure (WBS)

A complex venture is made manageable by first separating it into individual parts in a various leveled structure, known as the work breakdown structure, or the WBS. According to BRIGHTHUBPM (n.d.) A Work Breakdown Structure (WBS) is utilized for separating a project into effortlessly reasonable segments. The work breakdown structure has various advantages alongside characterizing and sorting out the project work. Estimated cost and time can be allocated to each tasks to analyze project schedule and cost required. Project manager uses WBS to structure his/her project. For proposed project for Samajik College: "College Management System" appropriate WBS is analyzed and planed while producing project plan. WBS helps project manager to describe project scopes to its stake holders as well as assists manager with precise project organization. This tool supports with assigning responsibilities and project milestones can be identified and managed.

Current project is divided into eight phases. Project will start with phase one where feasibility study will be conducted to ensure feasibility and viability of the project. Then outline specification plan will be prepared in phase two, which will include specification in terms of budget, time, resources etc. Then Project plan will be prepared in phase three which includes various management plans such as governance plan, line of communication plan, risk management plant etc.

In phase four of WBS, estimated resources will be matched with the project in terms of resource sheets and resource graphs. All these plans will be used in Phase five to implement the propose college management system. Phase five consists of several other sub-tasks/activities, which are, Student management, faculty management, Fee management, user management and transaction management. Outcome of the project will be organized and interpreted in phase six. Phase sever

will conduct evaluation of final outcome against planned outcome. And finally phase six will provide necessary recommendations. WBS plan for project is demonstrated in figure 1.

WI	Task Name	Durati	Start	Finish	Predecessors	Cost
0	**College Management System**	**45 days**	**Fri 7/31/15**	**Thu 10/1/15**		**रु 92,200.00**
1	Conduct feasibility study	5 days	Fri 7/31/15	Thu 8/6/15		रु 14,000.00
2	Produce outline specification	8 days	Fri 7/31/15	Tue 8/11/15		रु 10,000.00
3	Produce project plan	5 days	Fri 7/31/15	Thu 8/6/15		रु 2,500.00
4	Matching Resources effectively to the project	7 days	Fri 8/7/15	Mon 8/17/15	1	रु 8,400.00
5	**Implement the proposed project**	**25 days**	**Wed 8/12/15**	**Tue 9/15/15**	**1,2**	**रु 35,000.00**
5.1	Student Management					रु 0.00
5.2	Fee Management					रु 0.00
5.3	Faculty Management					रु 0.00
5.4	User Management					रु 0.00
5.5	Transaction Management					रु 0.00
6	Organize, analyze and interpret the outcome of the project	10 days	Wed 9/16/15	Tue 9/29/15	5,3	रु 10,000.00
7	Interpret and analyze the result in term of original project specification	10 days	Wed 9/16/15	Tue 9/29/15	4,5	रु 7,500.00
8	Make necessary recommendation	2 days	Wed 9/30/15	Thu 10/1/15	12,11	रु 4,800.00

Figure 2 WBP for Proposed College management System

Gantt chart

According to Rouse (n.d.) Gantt chart gives a graphical representation of a calendar that plans, facilitate, and track activities of a particular project. Gantt chart, generally utilized as a part of project management, beneficial to describe tasks and activity against allocated timeline. On the left of the diagram all task/activities are defined and right side of the diagram describes timeline of the project. Bar position in the timeline describes start times, ending time etc. Gantt chart allows project manager to describe project schedule to stakeholders and make necessary plan modification if necessary to comply project with defined project deadline. Project is estimated to long from July 29th to September 30th. Phase one, two, and three will start together. Longest phase in the project is implementation phase which will last 25 days. Gantt chart for the proposed college management system for Samajik College is prepared below.

Project Management Plans

Project structure and time schedule for propose project has been planned utilizing tools and WBS and Gantt char respectively. Now it is essential to plan other management modules for the project such as risk management, governance, change management etc. Each management strategy has been described beneath here in this report.

Project Governance Plan

The association guarantees responsibility to the project in the administration and arranging stage. Arrangement of Project Manager, Project Working Group, Project Team, Project Sponsor and Steering Committee guarantee conveyance of the project. According to UTAS (2015) the finish of the arranging stage guarantees conveyance of the project inside of the predefined of time, spending plan, quality and resource plan.

Project governance plan for proposed system would define various project levels of management, their roles as well as their responsibilities.

Level of Management	Project Governance Roles	Key Responsibilities
Senior Management	**Corporate Strategic Planning Group**	This group will prepare the overall strategic plan for any organization. Prepared plan will not have enormous numbers of decision but will contain critical decision that will have impact on structure of the project.
	Executive Sponsors	This group will provide leadership on values and culture of the project. This role will govern risk management to ensure continuity of sponsorships. Team would provide assurance and recommend opportunities.
	Project Steering Committee	This committee will manage the sustainability of the project to ensure successful delivery of project.
Middle Management	**Project Manager**	Project manager will control day-day operation of the project within delegation limit set by steering committee. Project manager works on ensuring successful project deliveries within defined time/cost/resources. He/she will prove project report to steering committee.

	Business visionary	This team will work on business module of the project to ensure solution will deliver business benefits. He/she will provide business strategies and monitor the changes.
	Technical Coordinators	Coordinators will supervise and coordinate activities and actions in technical department. He/she will ensure effectiveness of the technical department. Technical coordinators will handles same responsibilities as business visionary but related to technical decisions.
Operational Management	**Team Leader**	Team leader will ensure implementation team work together and report the updates to project manager. His responsibilities includes timely product delivery, distribution of delegation etc.
	System Analyst	This team will support and facilitate communication between technical and business participants. Suggest business requirement to solution development team. This team will design system
	Solution Developer	This team will work with system analyst and solution tester to develop agreed system. Team will also work on changes according to suggestions made by system analyst and solution tester.
	Solution Tester	Work together with solution developer and system analyst to check quality of the system. Team will create test plans and carry out various tests and prepare test log. Will report to team leader and provide suggestions to solution developer.
	Designer	This team will design and develop UI models for the system and report them to team leader.
	Database Expert	This team will design and develop database solution for the project and report them to team leader.

Line of communication plan

Charvat (2002) writes, communication is the most critical segment inside of any task. The achievement of most activities, whether took care of by a committed project group or a cross-departmental group, relies on an arrangement of critical relational abilities and strategies. Communication and human association represent the deciding moment of project. It is necessary for any project to have planned/defined rule for communication chain. For proposed college

management system, line of communication plan is developed below here. Project will follow the table below as guideline for line of communication.

Project Risk Management Plan

PM4ID (n.d.) writes, Overseeing dangers on tasks is a procedure that incorporates hazard appraisal and a moderation technique for those dangers. Hazard appraisal incorporates both the recognizable proof of potential danger and the assessment of the potential effect of the danger. A danger relief arrangement is intended to dispense with or minimize the effect of the danger occasions—events that negatively affect the task. Recognizing danger is both an innovative and a trained procedure. The imaginative procedure incorporates meetings to generate new ideas where the group is solicited to make a rundown from everything that could turn out badly. A risk management plan for college management system would help to estimate potential threat and plan strategies to medicate those risks.

ID	Risks	Likelihood (High/Medium/ Low)	Impact (High/ Medium / Low)	Mitigation Strategy	Responsible Person	Date
1.	Sponsor withdrawal from the project	Low	High	Ensure smooth project management	Project manager	
2.	Uneven project management	Low	High	Give suggestion to project manager	Steering Committee	
3.	Failed to deliver project on time	Low	High	Control the project according to plans and apply required changes	Project manager	
4.	Bugs in developed product	High	Low	Test and report to development team	Test team	
5.	Data corruption	Medium	Medium	Keep backup of all data	S.D. team	
6.	Team loses motivation	Medium	Medium	Motivate the team	Team Leader	

Change management plan

Change administration is the procedure, tools and systems to deal with the general people side of change to accomplish the required business result. Change management consolidates the organizational tools that can be used to offer people some assistance with making effective

individual moves bringing about the selection and acknowledgment of progress. A change arrangement is a clarification of the proposed changes and the strides expected to accomplish them. An example of change management for college management system is planned below which will be used for controlling changes in client requirement.

<table>
<tr><td colspan="4">Project Title: College Management system for Samajik College</td></tr>
<tr><td colspan="4">Change Request</td></tr>
<tr><td colspan="2">Change Request ID: 01</td><td>Date of Request:</td><td>Change Requested By: Sponsor/Client</td></tr>
<tr><td colspan="4">Items to be Changed: Add feature in the product to manage information about all enquiries</td></tr>
<tr><td>Description of Change Request (reasons for change, benefits, date required)</td><td colspan="3">Existing does not have Enquiry management system. Hence change requirement is made. All enquiry made for admission should be stored in developed app. It will allow college to connect to them later and build well managed data of students that are interested in college.</td></tr>
<tr><td>Estimated Cost and Time to Implement</td><td colspan="3">Sponsor are willing to add up to 15 days and NRS. 25000/- rupees to implement the new changes</td></tr>
<tr><td>Impact on other deliverables</td><td colspan="3">New system is just another feature that can be delivered along with older design.</td></tr>
<tr><td colspan="4">Change Evaluation</td></tr>
<tr><td colspan="2">What is effected</td><td colspan="2">To implement changes to the system, existing resources are competent enough to make necessary modification. In regards of cost and time, project will require additional 10 days to design and implement system and as well as NRS. 20000/- more.</td></tr>
<tr><td colspan="2">Name of the Evaluator:
System Analyst/ Technical Coordinator</td><td colspan="2">Signature:</td></tr>
<tr><td colspan="4">Change Approval</td></tr>
<tr><td>Accepted: Yes</td><td>Rejected:</td><td>Signature:</td><td>Date:2015-11-29</td></tr>
<tr><td colspan="4">Comment:</td></tr>
<tr><td colspan="4">Change Implementation</td></tr>
</table>

Date Implemented:	Name of the Implementer:	Signature:
Comments: Change request was approved by Project manager after evaluation of its impact on original design. Change implementation will be visible after final project delivery.		

Summary

This report has planned activities/tasks for the project with helps of Work Breakdown Structure (WBS). Schedule for the proposed college management system has also been plan and graphically represented with utilizing planning tool called Gantt chart. Generated report can be used for presenting project scope and scheduling to the stakeholders. In addition of planning schedule and structure, this document also planned various other aspects of project such as risk management, change management, project governance and line of communication. These plan will help project manager to run the project and take appropriate action if anything goes wrong during the project.

References

- BRIGHTHUBPM (n.d.) what is a Work Breakdown Structure? http://www.brighthubpm.com/templates-forms/2645-what-is-a-work-breakdown-structure/ Accessed [11/20/2015]
- Charvat, J. (2002) Project communications: A plan for getting your message across [Online] Available: http://www.techrepublic.com/article/project-communications-a-plan-for-getting-your-message-across/ Accessed [11/21/2015]
- PM4ID (n.d.) Risk Management Process [Online] Available: http://pm4id.org/11/2/ Accessed [11/20/2015]
- Rouse, M. (n.d.) Gantt chart definition [Online] Available: http://searchsoftwarequality.techtarget.com/definition/Gantt-chart Accessed [11/20/2015]
- UTAS (2015) Project Management Methodology [Online] Available: http://www.utas.edu.au/project-management-methodology/project/governance-and-planning Accessed [11/21/2015]

Task 2 I [2.1]

Match resources efficiently to the agreed project.

Introduction

Previous part of this document has produced appropriate project plan for college management system. To manage the project efficiently, it is necessary to match estimated resource with the planned activities. A successful project manager effectively manages resources to ensure successful delivery of project. Improper resource planning leads to complication in project management and can jeopardize the whole project. This paper will plan resource sheet and resource allocation for the proposed software development project.

Tool Selection

Microsoft Project Management tool is utilized for coordinating assets of the project. MS project is utilized for task arranging, planning, asset assignment and change management. It permits project supervisors (PMs), partners and clients to control expenses and oversee planning, quality management and documentation furthermore may be utilized as an organization framework. In current context, Microsoft project has been utilized for effective resource allocation plan.

Resource Sheet

Resource sheet is utilized for listing all required resources for the project. This list will also describe resource Initials, resource type, standard rate and overtime rate. Resource sheet for College management system has been prepared in table below.

	Resource Name	Type	Initials	Std. Rate	Ovt. Rate
1	labour	Work	l	रु 200.00/day	रु 0.00/hr
2	Analyst	Work	A	रु 250.00/day	रु 0.00/hr
3	Designer	Work	D	रु 250.00/day	रु 0.00/hr
4	Programmer	Work	P	रु 200.00/day	रु 0.00/hr
5	Support	Work	S	रु 350.00/day	रु 0.00/hr
6	QA Engineer	Work	Q	रु 250.00/day	रु 0.00/hr
7	Documentation Expert	Work	D	रु 250.00/day	रु 0.00/hr
8	Expert Project Analyst	Work	E	रु 600.00/day	रु 0.00/hr

Figure 3 Resource Sheet for College Management System

Project activity and Resource planning

In project administration, resource allotment or resource administration is the booking of exercises and the resources required by those exercises while looking into both the resource accessibility and the task time. As the resources for project has been identified and documented. Now, these resources will be allocated to related activities/task from the project. This will allow manager to plan how each activities/task will be handled. This allocation plan is demonstrated in form of table and it includes activity/task and allocated resource. Table may optionally include cost and duration. Resource allocation plan for the college management system is prepared in table below.

	WI	Task Name	Duration	Cost	Resource Names
0	**0**	**WBS**	**48 days**	**रु 99,400.00**	
1	1	Conduct feasibility study	5 days	रु 14,000.00	labour[6]
2	2	Produce outline specification	8 days	रु 10,000.00	Analyst[5]
3	3	Produce project plan	5 days	रु 2,500.00	Designer[2]
4	4	Matching Resources effectively to the project	7 days	रु 8,400.00	Programmer[6]
5	5	Implement the proposed project	25 days	रु 35,000.00	Support[4]
6	6	Organize, analyze and interpret the outcome of the project	10 days	रु 10,000.00	QA Engineer[4]
7	7	Interpret and analyze the result in term of original project specification	10 days	रु 7,500.00	Documentation Expert[3]
8	8	Make necessary recommendation	5 days	रु 12,000.00	Expert Project Analyst[4]

Figure 4Resouce Allocation Plan for College Management system

Resource Allocation

To allocate resources to activities/task as planned above, following procedure is practiced.

1. First prepare resource sheet
2. Go to Gantt view and select task/activity to which resources are to be allocated
3. Then go to Task Form View (Task Detailed Form)
4. In resource name, select the appropriate resource from dropdown → click Ok→ Done

	WI	Task Name	Duration	Cost	Resource Names	A
0	0	WBS	48 days	₹ 99,400.00		
1	1	Conduct feasibility study	5 days	₹ 14,000.00	labour[6]	
2	2	Produce outline specification	8 days	₹ 10,000.00	Analyst[5]	
3	3	Produce project plan	5 days	₹ 2,500.00	Designer[2]	
4	4	Matching Resources effectively to	7 days	₹ 8,400.00	Programmer[6]	

Figure 5 Activity selection of resource allocation

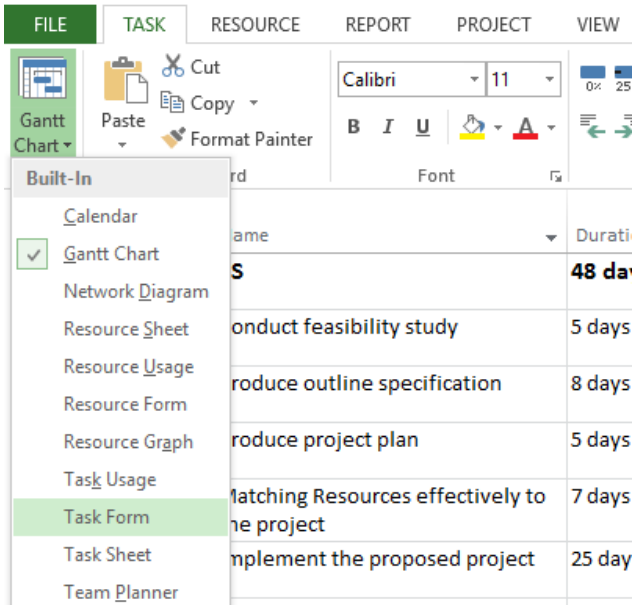


Figure 6Task from view selection

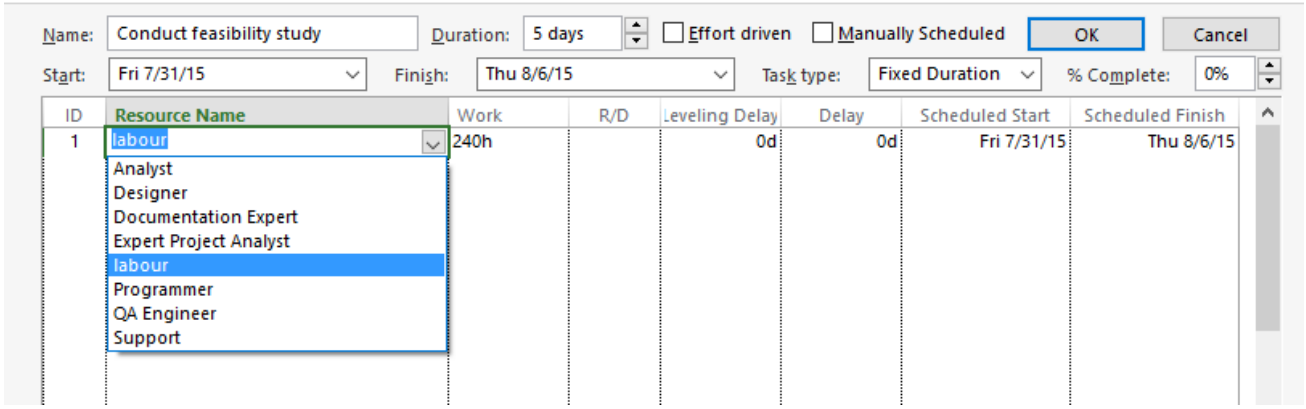


Figure 7Resource Allocation

Resource Quantity

While managing the project, manager may require to allocate 10 programmers to task. Resource allocation plan for college management system describes required number of a resource for any task. Now to modify the number of allocated resource on a task, following practice is utilized.

1. Go to Gantt chart view
2. Right click on the task/event to which resource is required to be allocated
3. Choose Assign Resources→ From assign resource table modify units number
4. Close

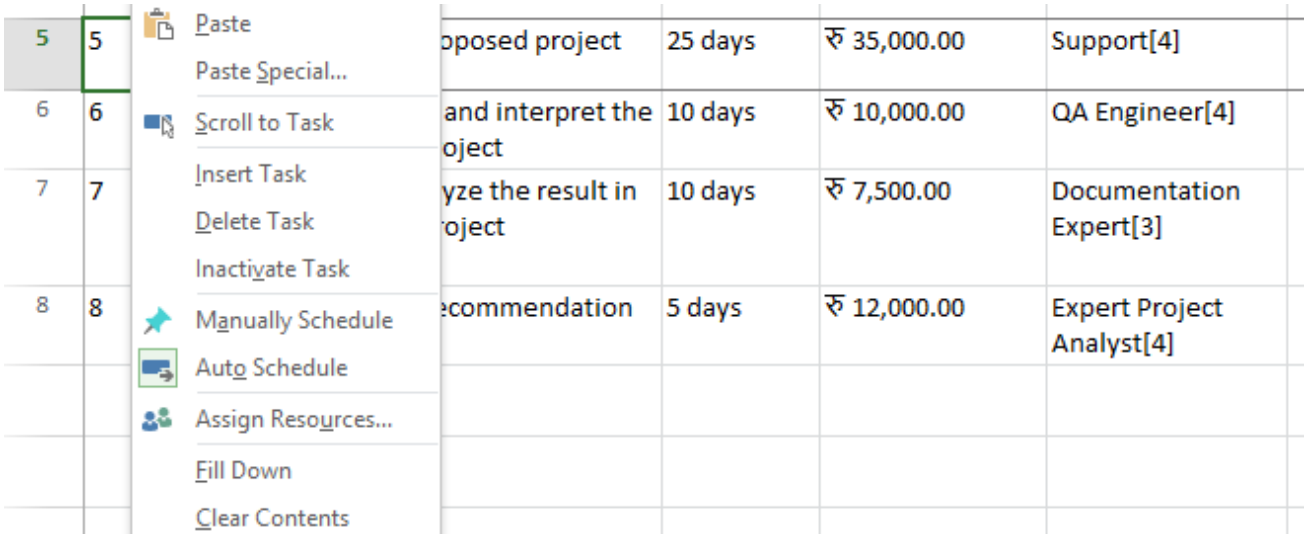


Figure 8Right click on task to choose assign resource

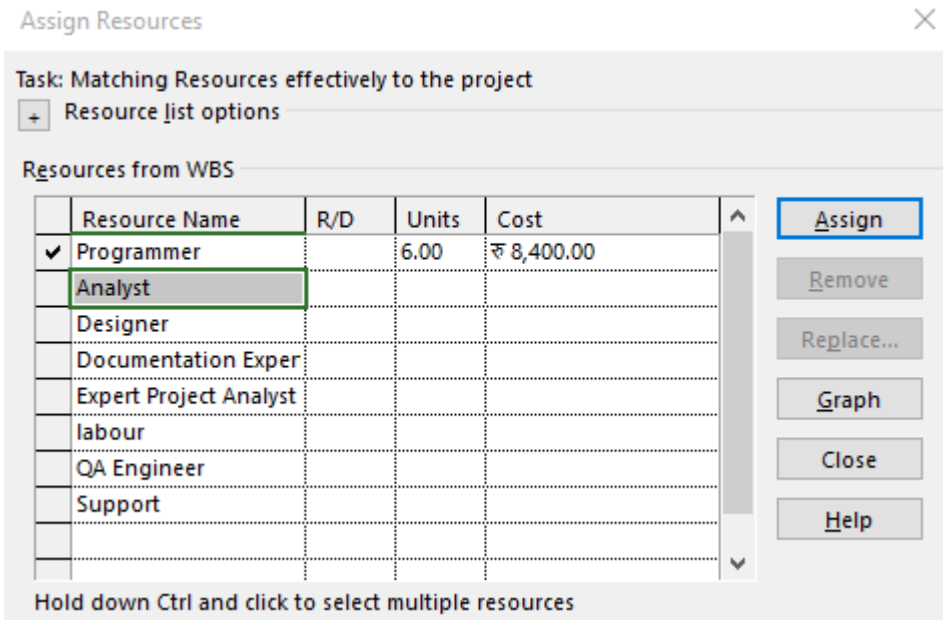


Figure 9Assign Resource Table

Resource Usage

While matching resources, resource usage tool allow to study usage of resource over time. It describes amount of work each resource has performed. It includes resource name, activity that resource attached to and performed work. Resource usage sheet for the project is prepare below.

	Resource Name	Work	Details	Aug 2, '15 M	S	T	T	Aug 16, '15 S	F	W	Aug 30, '15 M	S	T	Sep 13, '15 T	S	Sep 27, '15 F	W
	Unassigned	0 hrs	Work														
1	labour	240 hrs	Work	48h	144h	48h											
	Conduct feasibility st	*240 hrs*	Work	48h	144h	48h											
2	Analyst	320 hrs	Work	40h	120h	120h	40h										
	Produce outline specification	*320 hrs*	Work	40h	120h	120h	40h										
3	Designer	80 hrs	Work	16h	48h	16h											
	Produce project plan	*80 hrs*	Work	16h	48h	16h											
4	Programmer	336 hrs	Work			96h	192h	48h									
	Matching Resources effectively to the	*336 hrs*	Work			96h	192h	48h									
5	Support	800 hrs	Work				96h	128h	96h	96h	160h	96h	96h	32h			
	Implement the proposed project	*800 hrs*	Work				96h	128h	96h	96h	160h	96h	96h	32h			
6	QA Engineer	320 hrs	Work											96h	128h	96h	
	Organize, analyze and interpret the outcome of the	*320 hrs*	Work											96h	128h	96h	
7	Documentation Expert	240 hrs	Work											72h	96h	72h	
	Interpret and analyze the result in term of original	*240 hrs*	Work											72h	96h	72h	
8	Expert Project Analyst	64 hrs	Work														64h
	Make necessary recommendation	*64 hrs*	Work														64h

Figure 10 Resource Usage sheet

Summary

This paper documents resource allocation and assignment of proper resources in order to match the specification. Project management tool is used to match the resources efficiently. First all required resources are determined and listed in resource sheet plan. Then resources are efficiently assigned to various phases of the project matching their expertise and experience. Resource allocation procedure is documented in this paper. Then resource usage sheet is prepared to study works done/ need to be done by each resource for their activity/task. Resources are efficiently assigned to match agreed specification.

Task 2 II [2.2, M2]

Undertake/implement the proposed project in accordance with the agreed specification.

Introduction

This paper documents undertaking/implementation of proposed project. To implement project various tool, methods and techniques are applied to design the system and then implement it. Tools like context diagram allows to understand boundaries of system, flowchart enables to understand flow in the system and schema diagram provides necessary information to determine database system for the project.

Context Diagram

Context diagram is highest level overview of the system. Context diagram for college management system is drawn in figure 1 below. It describes core process and its link with external entities. Proposed system has college management system as core process. And various external entities of proposed system are student, user, admin, faculties, batch, awarding bodies and various fees. This diagram helps developer to understand various required modules in the system

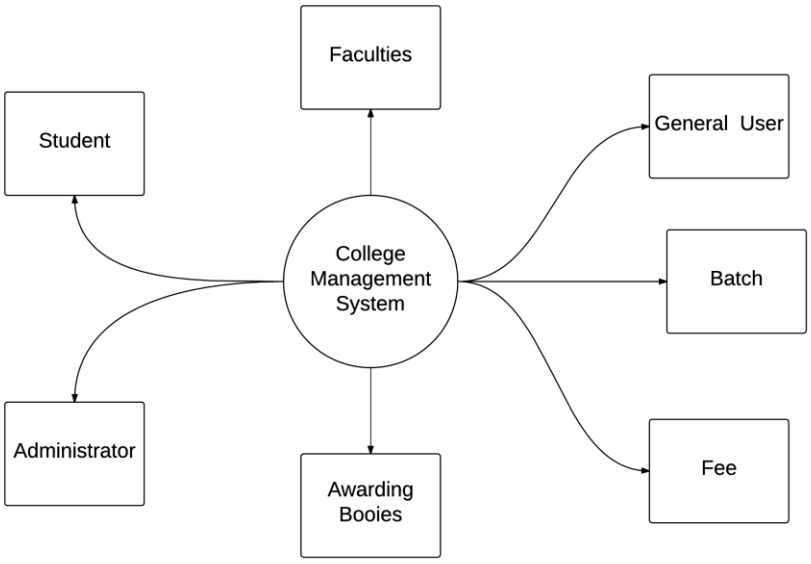


Figure 11Context diagram for the project implementation

Schema diagram

Database is required to store information about students, user, faculties, fees etc. in the current system. To design and plan database system schema diagram for the system is drawn below.

In schema diagram all database object and their entities are described. Relation between objects are also described. Schema diagram for college management system includes students, user,

faculties, fee structure, fee payment, user types etc. as object and their attributes. Developer will able to study schema diagram and convert it to real database system for the project.

Database for the implemented project

Analyzing schema diagram, Database for project is designed as follows.

Table	Attributes	Description
USER	USER_ID USERNAME PASSWORD	Table to store user information
USER_ROLE	USER_ROLEID CATEGORY DESCRIPTION	Table to store user types information
STUDENT	STUDENT_ID NAME ADDRESS FACULTY BATCH SEMESTER GENDER EMAIL CONTACT GUARIDIAN_NAME STATUS	Table to store student information
BATCH	BATCHID NAME DESCRIPTION	Table to store batch information
AWARDING_BODY	ID NAME DESCRIPTION	Table to store awarding body information
FEE_PAYMENT	PAYMENT_ID STUDENTID FACULTY	Table to store payment history

	PAYMENT_OF_YEAR SCHOLARSHIP DISCOUNT MOE_FEE TOTAL_AMOUNT TAX TOTAL_PAID DUE	
FEE_YEAR	YEAR_ID DESCRIPTION	Table to store study year information example: first year, second year and third year
FEE_MANAGEMENT	FEE_ID FEE_YEAR RESOUCE ADMISSION FIRST_INSTALLMENT SECOND_INSTALLMENT THIRD_INSTALLMENT	Table to store Fee structure information
FACULTY	FACULTY_ID NAME DESCRIPTION	Table to store faculty information
ENQUIRY	ID ENQ_PERSON_NAME ADDRES CONTACT INTERESTED PROGRAM DATE MASSGE	Table to store enquiry information

Flow Chart

Flow chart is used for graphically representing flow of the system. Flow chart for the college management system is drawn below. This chart will allow developer to plan structure for the system.

Implementation

After designing and developing database for the project, further implementation is done with help of Visual Studio (IDE). User interface is developed using WINFORM technology and code behind is implemented using C#.net programming language. Implemented UI and code behind is documented here.

LOGIN MODULE

This module will authenticate and authorize user while accessing the system. This module is loaded first when developed system is executed.

Login UI

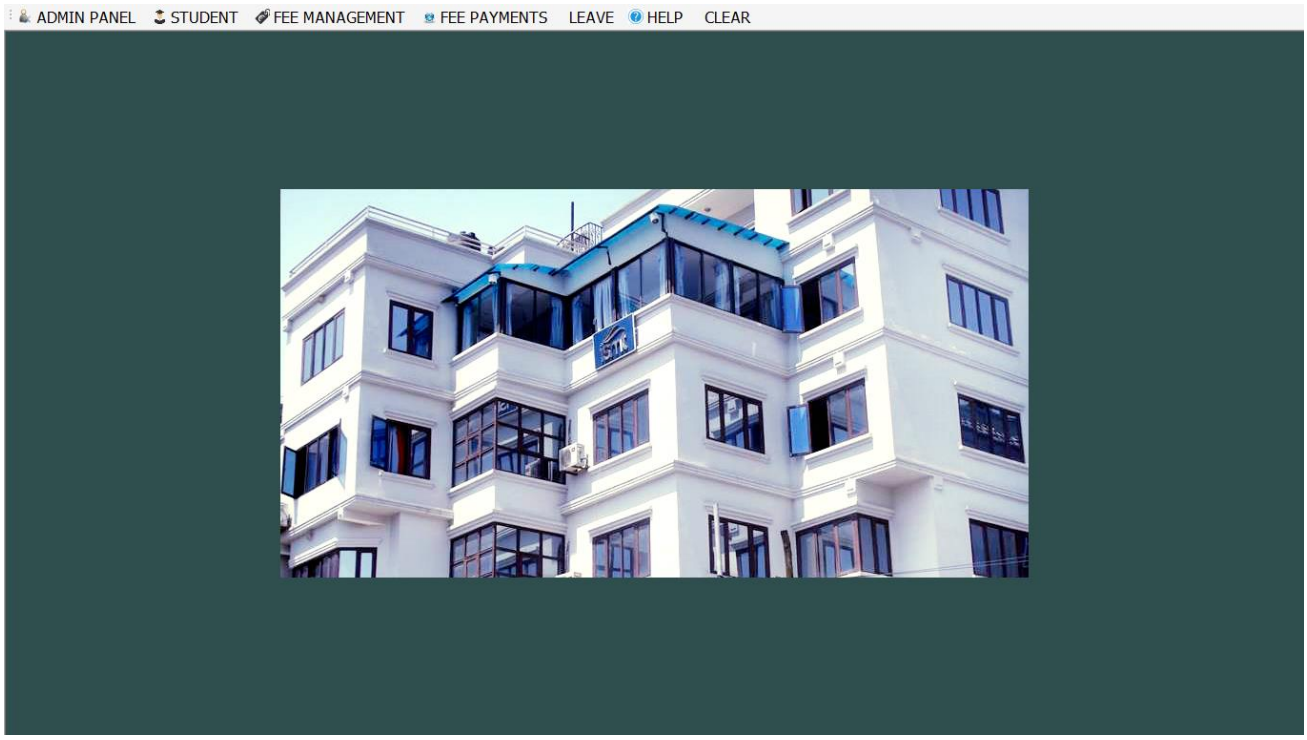
Code Behind

```
private void LoginForm_Load(object sender, EventArgs e)
{
    cmbRoleLogin.DataSource = RoleClass.GetAllRoles();
    cmbRoleLogin.DisplayMember = "RoleName";
    cmbRoleLogin.ValueMember = "RoleName";
    cmbRoleLogin.SelectedIndex = -1;
    txtPassword.Clear();
    txtUserName.Clear();
}

private void btnCancel_Click(object sender, EventArgs e)
{
    ResetLoginForm();
}

private void ResetLoginForm()
{
    txtPassword.Clear();
    txtUserName.Clear();
    cmbRoleLogin.SelectedIndex = -1;
    lblError.Visible = false;
}
```

Dashboard

This is main page when user access the system. It provides platform to access various other modules of the system.

Dashboard UI



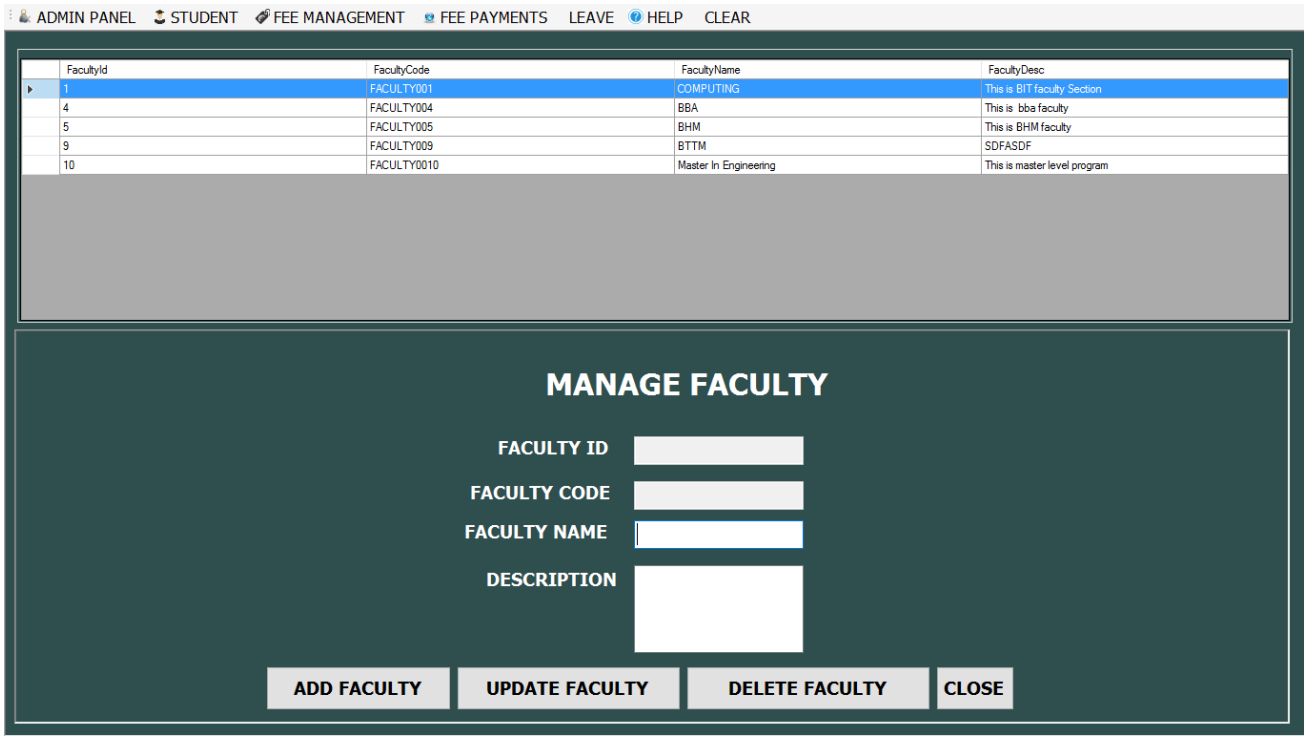
Code Behind

```
namespace ISMT_FEE_MANAGEMENT_BY_SECTION_D
{
    public partial class ProjectMainForm : Form
    {
        public ProjectMainForm()
        {
            InitializeComponent();
        }

        private void mANAGEFACULTYToolStripMenuItem_Click(object sender, EventArgs e)
        {
            pnlContainer.Controls.Clear();
            Faculty Faculty= new Faculty();
   Faculty.TopLevel = false;
   pnlContainer.Controls.Add(Faculty);
   Faculty.FormBorderStyle = System.Windows.Forms.FormBorderStyle.None;
    Faculty.Dock = DockStyle.Fill;
    Faculty.Show();
        }

        private void mANAGEBATCHToolStripMenuItem_Click(object sender, EventArgs e)
        {
            pnlContainer.Controls.Clear();
            ManageBatch batch = new ManageBatch();
```

Faculty Management

This module will be loaded in Dashboard and will allow user to manage faculty information. User will be able to view, add, modify and delete faculty.

Faculty Management UI



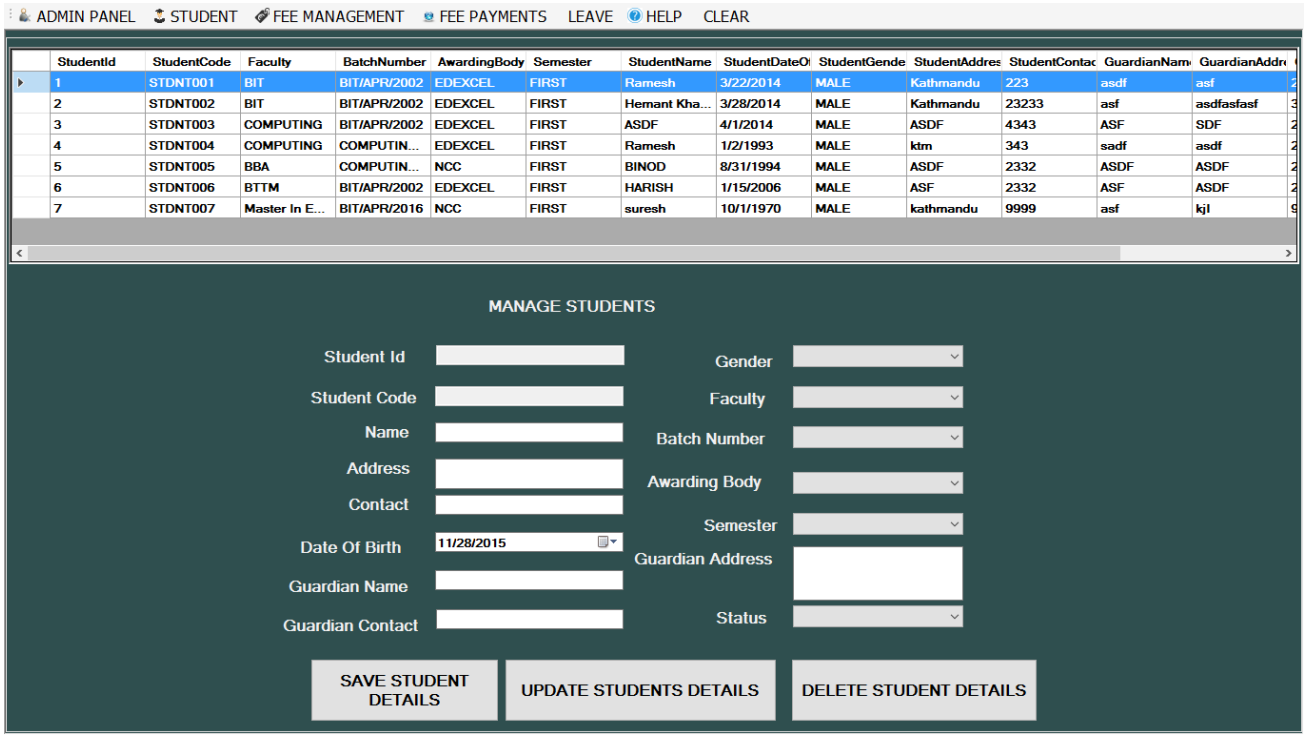
Code Behind

```
private void CreateNewFaculty()
{
    bool result = iblc.FacultyManagement(0, txtFacultyName.Text, txtDescription.Text, 1);
    if (result == true)
    {
        MessageBox.Show("NEW FACULTY SUCCESSFULLY CREATED");
        dgvFacultyDetails.DataSource = idac.SelectFaculties();
    }
    else
    {
        MessageBox.Show("SOME ERRORS OCCURED");
    }
}

private void Form1_Load(object sender, EventArgs e)
{
    dgvFacultyDetails.DataSource = idac.SelectFaculties();
}

private void dgvFacultyDetails_Click(object sender, EventArgs e)
{
    try
    {
        txtFacultyId.Text = dgvFacultyDetails.SelectedRows[0].Cells[0].Value.ToString();
        txtFacultyCode.Text = dgvFacultyDetails.SelectedRows[0].Cells[1].Value.ToString();
        txtFacultyName.Text = dgvFacultyDetails.SelectedRows[0].Cells[2].Value.ToString();
        txtDescription.Text = dgvFacultyDetails.SelectedRows[0].Cells[3].Value.ToString();
```

Student Management

This module will allow user to add, modify, delete and view student information.

Student Management UI



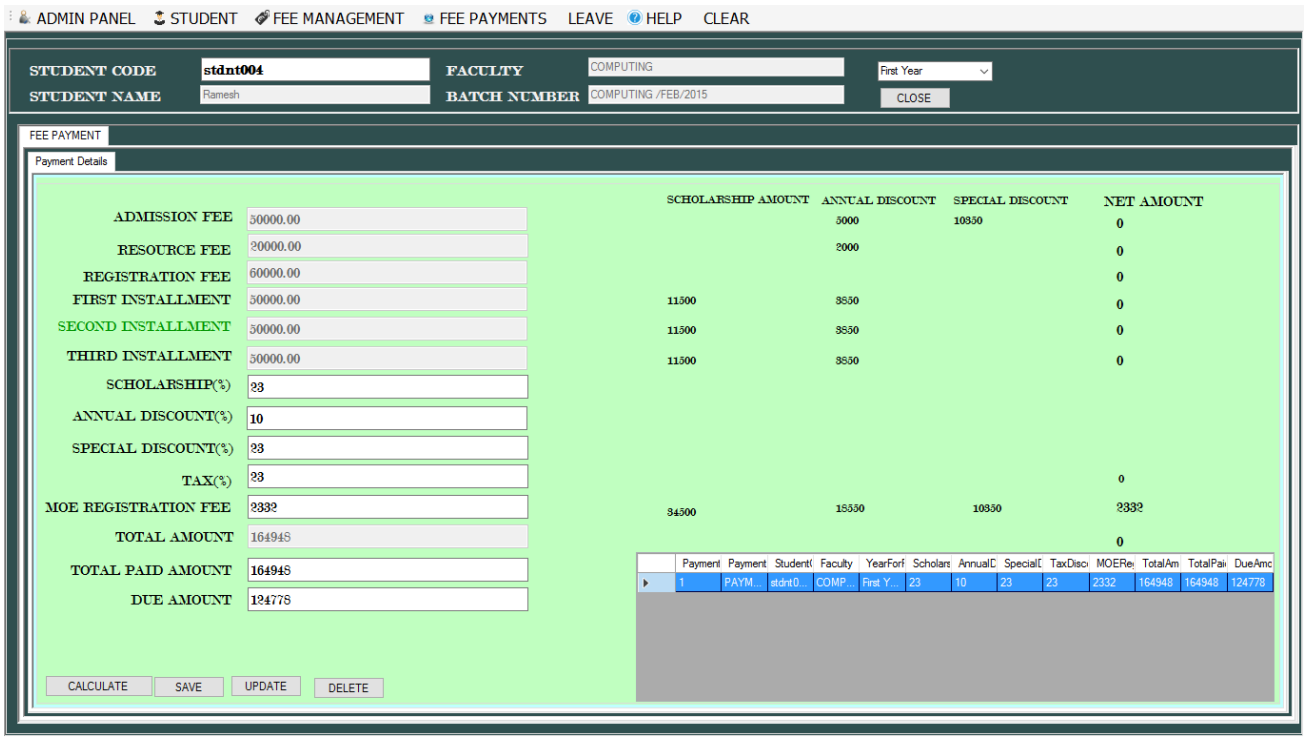
Code Behind

```
private void ManageStudents_Load(object sender, EventArgs e)
{
    try
    {
    cmbBatchNumber.DataSource = bc.SelectAllBatch();
    cmbBatchNumber.ValueMember = "BatchName";
    cmbBatchNumber.DisplayMember = "BatchName";
    cmbBatchNumber.SelectedIndex = -1;
    cmbAwardingBody.DataSource = awbc.SelectAllAwardingBody();
    cmbAwardingBody.DisplayMember = "AwardingBodyName";
    cmbAwardingBody.ValueMember = "AwardingBodyName";
    cmbAwardingBody.SelectedIndex = -1;
    cmbFaculty.DataSource = idac.SelectFaculties();
    cmbFaculty.DisplayMember = "FacultyName";
    cmbFaculty.ValueMember = "FacultyName";
    cmbFaculty.SelectedIndex = -1;
    dgvStudentDetails.DataSource = sc.SelectAllStudents();
    }
    catch (Exception ex)
    {

        MessageBox.Show(ex.Message);
    }
}

private void button4_Click(object sender, EventArgs e)
{
    this.Close();
}

private void btnSaveDetails_Click(object sender, EventArgs e)
```

Transaction Management

This module will allow accountants to calculate and keep history of fee payment.

Transaction Management UI



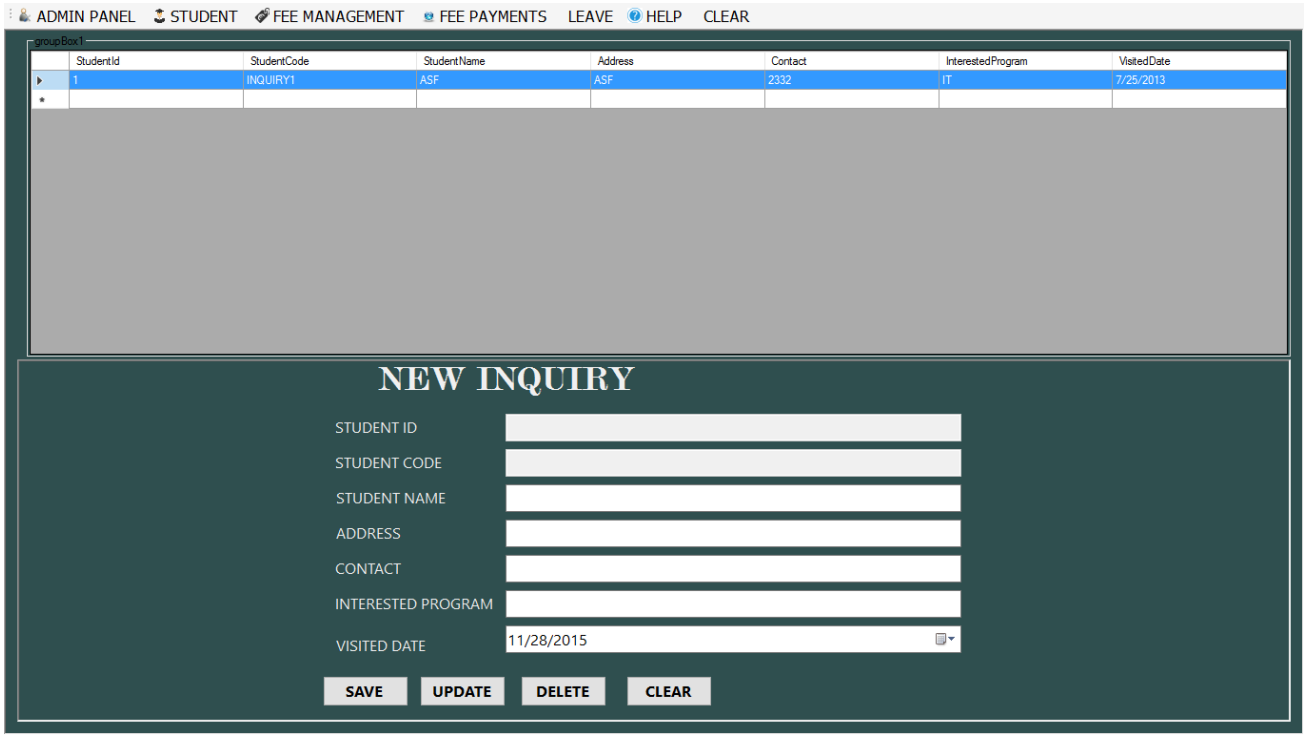
Code Behind

```
ClassDataAccess idac = new ClassDataAccess();
ClassStudentManagement sc = new ClassStudentManagement();
ClassFeeManagement fmc = new ClassFeeManagement();
AllValues gv = new AllValues();
ClassFeeTransaction fpc = new ClassFeeTransaction();
BusinessLogicClass blc = new BusinessLogicClass();
private void txtStudentCode_TextChanged(object sender, EventArgs e)
{
    try
    {
        DataSet ds = new DataSet();
        ds = sc.SelectStudentByCode(txtStudentCode.Text);
        txtStudentName.Text = ds.Tables[0].Rows[0][0].ToString();
        txtFaculty.Text = ds.Tables[0].Rows[0][1].ToString();
        txtBatchNumber.Text = ds.Tables[0].Rows[0][2].ToString();
    }
    catch (Exception)
    {


    }
}
private void FeePaymentFrm_Load(object sender, EventArgs e)
{
    try
    {
        dgvFeeDetails.DataSource = fpc.GetAllFeePaidDetails();
```

Enquiry Module

This module will allow receptionists to keep track of all new students interested in joining college.

Enquiry Module UI



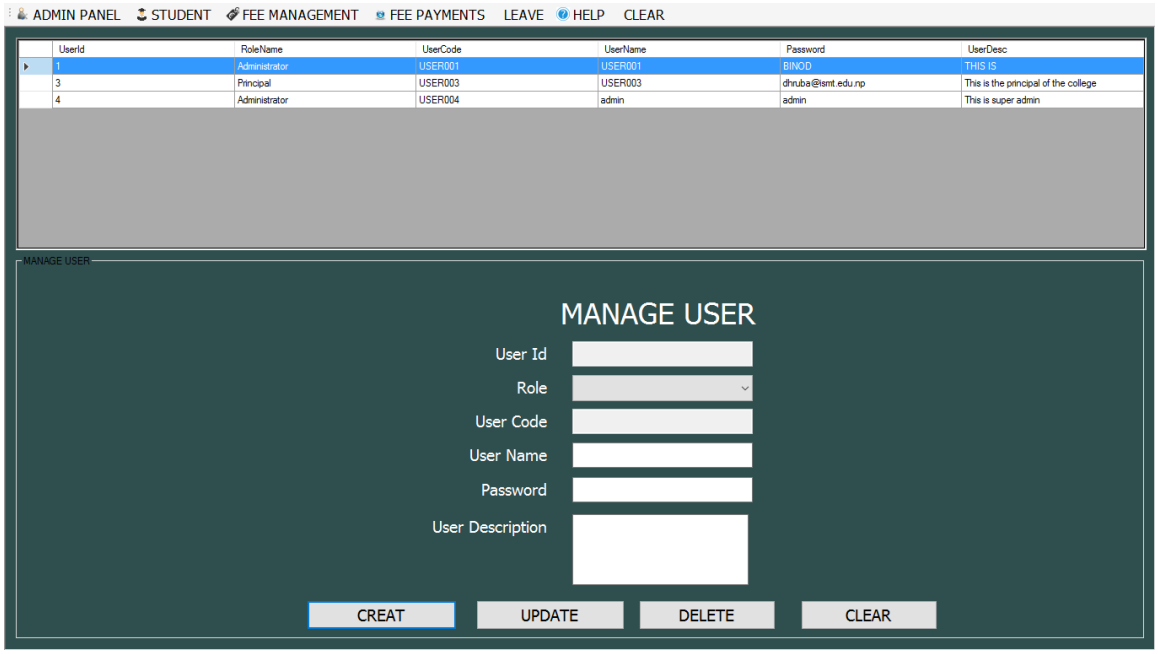
Code Behind

```
public ManageInquiry()
{
    InitializeComponent();
}
BusinessLogicClass iblc = new BusinessLogicClass();
ClassInquiry ic = new ClassInquiry();


private void SaveInquiry()
{
    try
    {
        bool result = iblc.NewInquiry(0, txtStudentName.Text, txtAddress.Text, txtContact.Text, txtIntereste
        if (result == true)
        {
            MessageBox.Show("NEW INQUIRY HAS BEEN SAVED");
            dgvInquiryDetails.DataSource = ic.GetAllInquiry();
        }
        else
        {
            MessageBox.Show("SOME ERROR HAS OCCURED");
        }
    }
    catch (Exception ex)
    {

        MessageBox.Show(ex.Message);
    }
```

User Management

This module will allow administrator to create and manage user and assign roles to the user.

User Management UI



Code Behind

```
private void UserFrm_Load(object sender, EventArgs e)
{
    cmbRole.DataSource = rc.GetAllRoles();
    cmbRole.DisplayMember = "RoleName";
    cmbRole.ValueMember = "RoleName";
    cmbRole.SelectedIndex = -1;
    dgvUserDetails.DataSource = uc.SelectAllUsers();
}

private void btnCreateUser_Click(object sender, EventArgs e)
{
    if (txtUserName.Text == "")
    {
        MessageBox.Show("PLEASE PROVIDE USERNAME FIRST");
        txtUserName.BackColor = Color.Red;
        return;
    }
    else if (txtPassword.Text == "")
    {
        MessageBox.Show("PLEASE PROVIDE PASSWORD FIRST");
        txtPassword.BackColor = Color.Red;
        return;
    }
```

Summary

This paper documented use of various tools and technologies while implementing project specification. Project boundaries were demonstrated and studied using context diagram. Similarly, Flow chart allowed to understand process flow in the system. Database for system is designed using schema diagram. And finally system is implemented using windows form technology and C#.net programming.

Task 2 III [2.3]

Organize, analyze, and interpret relevant outcomes of the agreed project.

Introduction

Various tools and technologies are utilized to perform systematic recording of relevant outcome of several stages of the project. These records are then further studied to organize, analyze and interpret the result of the project performance.

Project Outcome

Original outline specification of the college management system project specifies following project outcomes.

1. Feasibility study report recommending most feasible project
2. Outline specification report for the recommended project
3. Prepared Project plan documents
4. Match resources against activities of the project
5. Implementation of project plan
6. Evaluation of outcome of the project
7. Evaluation of outcome in term of original project specification
8. Recommendation document for future consideration

Product Outcomes

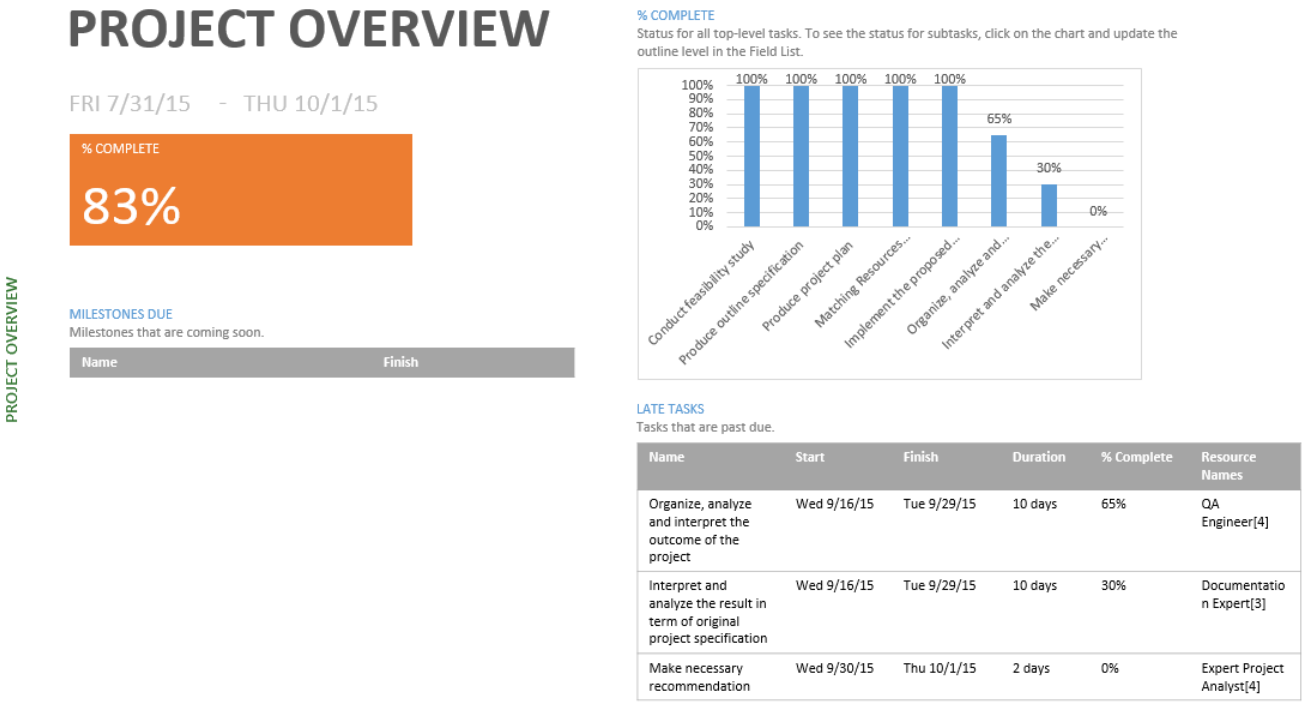
Propose outline specification emphasize following product outcomes.

1. Student Management Module
2. User Management Module
3. Faculty Management Module
4. Fee Management Module
5. Transaction Management Module
6. Awarding Body Management Module

Project Overview

Project progression report is organized with help of project overview report. (Figure 1) demonstrates organization of project performance. This report will allow manager to analyze and interpret the relevant outcomes. Report shows 83% of the project has been completed already. It shows Two phases are in progress whereas make recommendation phase has not be started yet.

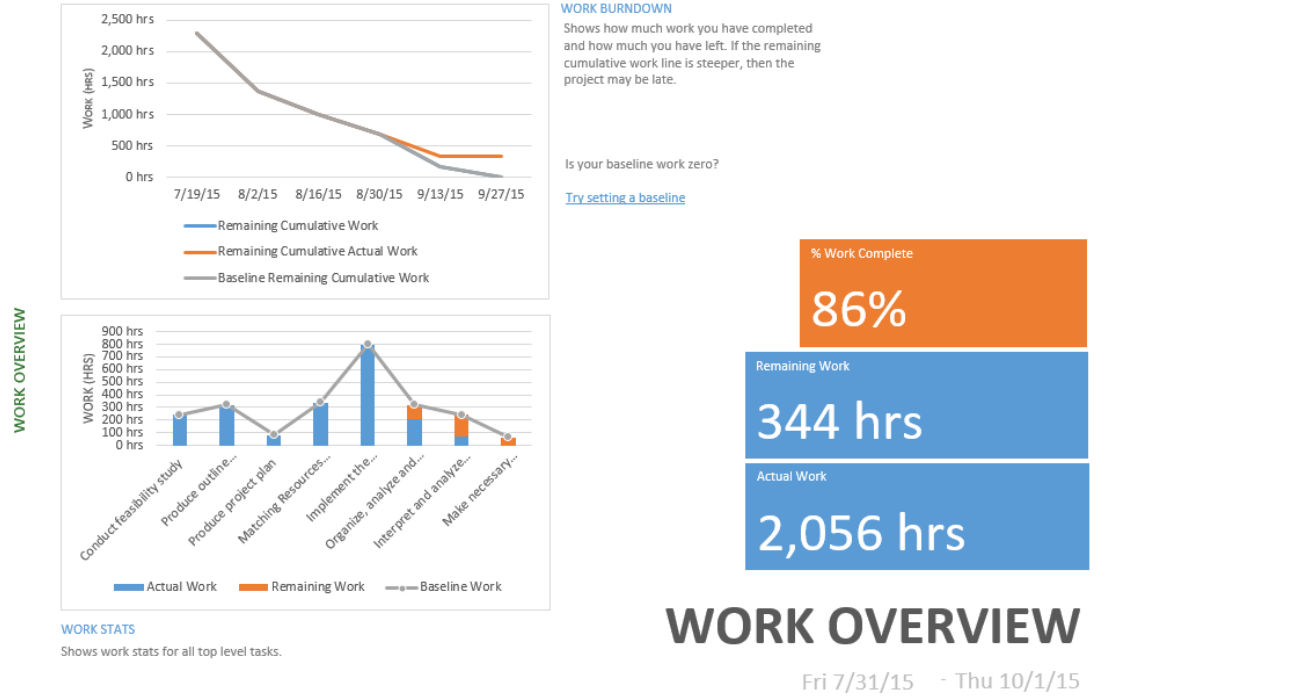
Project overview report allows manager to present project status to stakeholders based on project governance plans.



Name	Start	Finish	Duration	% Complete	Resource Names
Organize, analyze and interpret the outcome of the project	Wed 9/16/15	Tue 9/29/15	10 days	65%	QA Engineer[4]
Interpret and analyze the result in term of original project specification	Wed 9/16/15	Tue 9/29/15	10 days	30%	Documentation Expert[3]
Make necessary recommendation	Wed 9/30/15	Thu 10/1/15	2 days	0%	Expert Project Analyst[4]

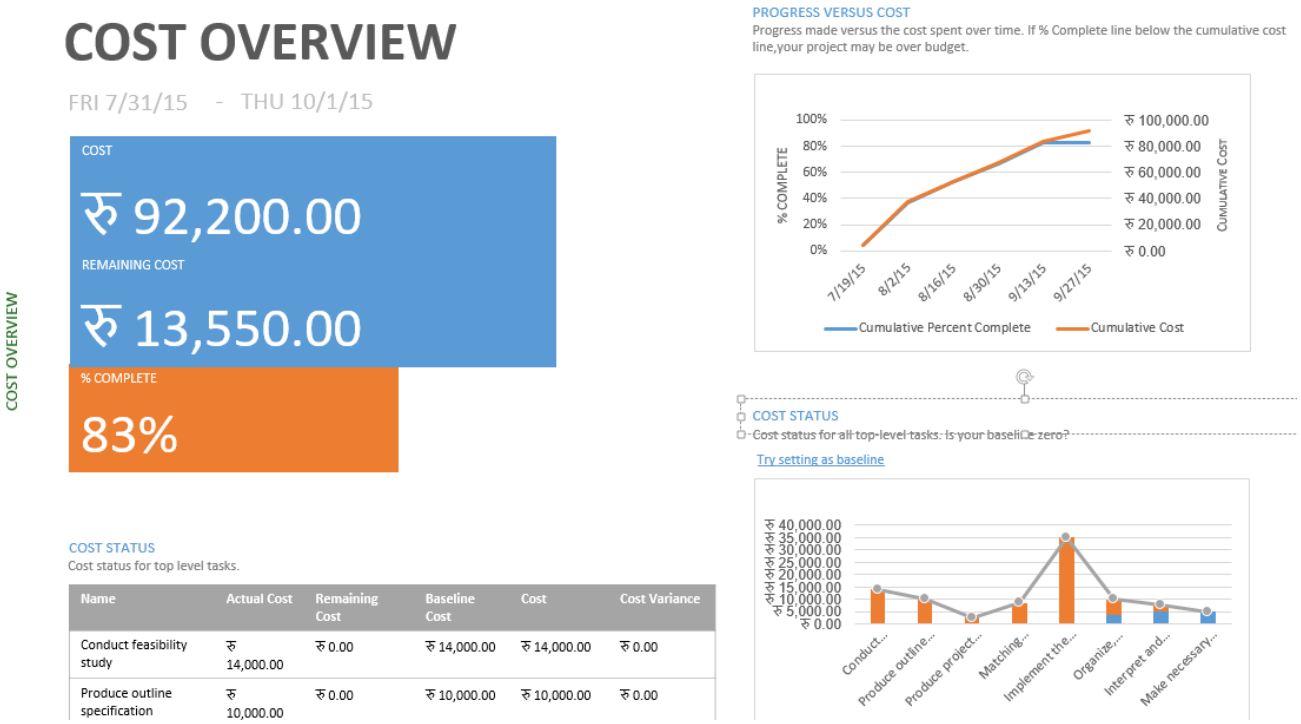
Work Overview

Work overview report is similar to project overview but in terms of work hours. It means it describes all necessary work data. Report shows 86% of work has been completed while 344 hours of work still to be done.



Cost Overview

Cost overview describes project progression in terms of cost allocation. Generated report suggests out of total budgets, 83% work has already been completed, and out of NRs. 92,200 only NRs. 13,550 is remaining cost. The remaining cost will be required for remaining works of 17%. Completed work and cost allocation is demonstrated in orange color whereas remaining cost and work is referred by blue color. This tool will allow manager to present project status in terms of budget.



Name	Actual Cost	Remaining Cost	Baseline Cost	Cost	Cost Variance
Conduct feasibility study	रु 14,000.00	रु 0.00	रु 14,000.00	रु 14,000.00	रु 0.00
Produce outline specification	रु 10,000.00	रु 0.00	रु 10,000.00	रु 10,000.00	रु 0.00

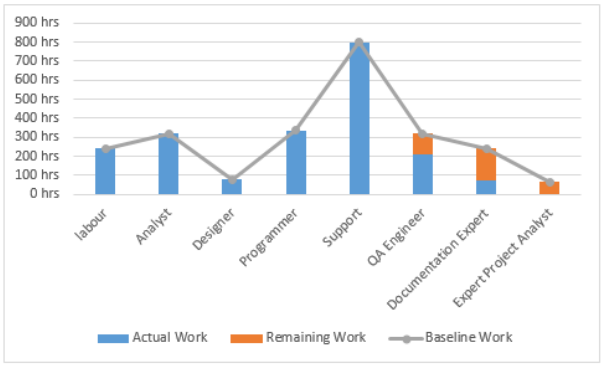
Resource Overview

This report graphically describes resource allocation as well as works done by resources on each activities. Generated report suggest Support team performed maximum work among all resources. All completed works are denoted by blue color and remaining work by each resource is denoted by orange color. Report shows labor, analyst, designer, programmer and support has completed their work. One hundred and twelve hours of work is remaining for QA engineer and hundred and sixty eight hours of work is remaining for document experts.

RESOURCE OVERVIEW

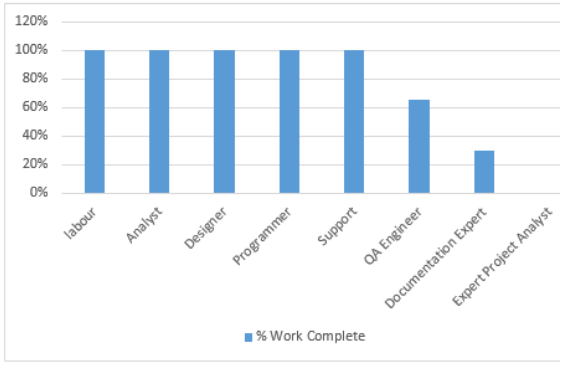
RESOURCE STATS

Work status for all work resources.



WORK STATUS

% work done by all the work resources.



RESOURCE STATUS

Remaing work for all work resources.

Name	Start	Finish	Remaining Work
labour	Fri 7/31/15	Thu 8/6/15	0 hrs
Analyst	Fri 7/31/15	Tue 8/11/15	0 hrs
Designer	Fri 7/31/15	Thu 8/6/15	0 hrs
Programmer	Fri 8/7/15	Mon 8/17/15	0 hrs
Support	Wed 8/12/15	Tue 9/15/15	0 hrs
QA Engineer	Wed 9/16/15	Tue 9/29/15	112 hrs
Documentation Expert	Wed 9/16/15	Tue 9/29/15	168 hrs
Expert Project Analyst	Wed 9/30/15	Thu 10/1/15	64 hrs

Summary

This document utilized project management tool to organize recording of the project progression. Then generated report is analyzed and interpreted to present project status to stakeholders and study overall project behaviors. Completed measurements in terms of project itself, cost, work and resource work is analyzed together with remaining project, work, cost and resource work. This allows to plan necessary changes in order to completed project within defined budget, time and resources.

Task 3 I [3.1, 3.2, D3]

Use appropriate project evaluation techniques. Then interpret and analyze the result in terms of the original project specification.

Project Evaluation and Review Technique (PERT)

Before starting work on a project, it is essential to perform accurate and advance time estimation. Which helps project to analyze and plan project so that it can be completed within targeted budget and timescale. According to TUTORIALSPOINT (n.d.), the Program Evaluation and Review Technique is successful tool for estimation phase of project and proven among other tools and techniques such as ESTIMATING, WAVE etc. PERT is a broadly utilized strategy for arranging and planning vast scale ventures. PERT is strategy honed to arrange, timetable, and spending plan and control the few exercises related with project.

PERT planning implicates the following stages:

1. Identify activities and milestones – Various activities on WBS are identified
2. Determine the appropriate arrangement of the events – Together with stage 1, this stage determines sequence of activities required to complete the project.
3. Prepare a network diagram – Analyzing stage 1 and 2, network diagram is created that graphically describes activates and milestone
4. Estimate the time needed for each activity – Here time required for each activity is estimated
5. Calculate Critical Path – Critical path is analyzed.
6. Update PERT chart according to Progression – Estimated times are replaced with actual time as work progress

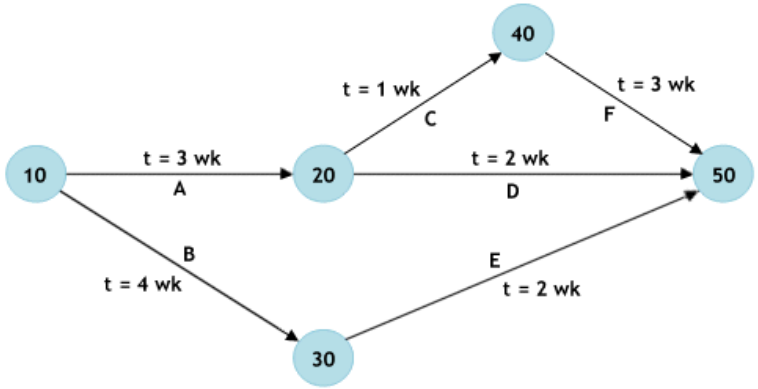


Figure 12Basic PERT calculation Diagram (Source: www.technologyuk.ne)

Critical Path

Critical path is calculated by determining the lengthiest path in the project. In simple word, in activity sequence, there can be more than one path to reach certain phase. Out of all paths the longest path is considered critical path. In figure above (figure 1) to reach phase 10 to 50, path A→ C → F requires 7 weeks whereas path A → D requires only 5 weeks. And path B→E requires 6 weeks. This means longest path A→C→F is considered critical path. Amount of time on this path cannot be extended without hampering project time estimation. These extra times are called slack.

Advantage of PERT

Proper implementation of PERT in project offers much advantages. Following are some of the key benefits:

1. Proper project completion time estimation as well as Start and ending time of project/phases
2. Identification of critical tasks
3. Evaluation of flexibility in project
4. Helps to reduce project time by lending extra resources from non-critical task to critical task

PERT Evaluation of Current Project

Identification of activities and time

For PERT evaluation, first various activities/milestones are required to be identified. For college management system, following activities has been identified along with required time.

	WI	Task Name	Duration	Predecessors
0	**0**	**College Management System**	**45 days**	
1	1	Conduct feasibility study	5 days	
2	2	Produce outline specification	8 days	
3	3	Produce project plan	5 days	
4	4	Matching Resources effectively to the project	7 days	1
5	**5**	**Implement the proposed project**	**25 days**	**1,2**
11	6	Organize, analyze and interpret the outcome of the project	10 days	5,3
12	7	Interpret and analyze the result in term of original project specification	10 days	4,5
13	8	Make necessary recommendation	2 days	12,11

Network Diagram

To perform PERT analysis, Network diagram for project is developed below here.

In above network diagram, ID of each activities, their start time, finish time, duration and allocated resources is described. Different color is used to critical and non-critical phase. Fortunately, automated system is utilized to create this network diagram which automatically determines critical paths. With the help of prepared network diagram, project completion date and flexibility in project due to slack can be analyzed.

Slack Analysis

Analyzing slack in the project estimation allows manager to reduce project duration by allocating free resources to critical path and reduce its size. As duration of the project depends of the critical path, reducing critical path duration reduces overall duration. Slack can be calculated manually using simple methodologies as well as using automated system. Slack for college management system is determined using automated system below.

	Wi	Task Name	Durati	Start	Finish	Prede	Critical	Start Slack
0	**0**	**2.3**	**45 days**	**Fri 7/31/15**	**Thu 10/1/15**		**Yes**	**0 days**
1	1	Conduct feasibility study	5 days	Fri 7/31/15	Thu 8/6/15		No	3 days
2	2	Produce outline specification	8 days	Fri 7/31/15	Tue 8/11/15		Yes	0 days
3	3	Produce project plan	5 days	Fri 7/31/15	Thu 8/6/15		No	28 days
4	4	Matching Resources effectively to the project	7 days	Fri 8/7/15	Mon 8/17/15	1	No	21 days
5	**5**	**Implement the proposed project**	**25 days**	**Wed 8/12/15**	**Tue 9/15/15**	**1,2**	**Yes**	**0 days**
11	6	Organize, analyze and interpret the outcome of the project	10 days	Wed 9/16/15	Tue 9/29/15	5,3	Yes	0 days
12	7	Interpret and analyze the result in term of original project specification	10 days	Wed 9/16/15	Tue 9/29/15	4,5	Yes	0 days
13	8	Make necessary recommendation	2 days	Wed 9/30/15	Thu 10/1/15	12,11	Yes	0 days

Figure 13Critcal task and Slack in College Management system

Table above (Figure 2) shows several critical tasks and slacks. According to PERT, activity "Produce project plan" can take 28 extra days without having negative impact on project duration. Similarly, according to table, Implement the project phase is critical, which means duration cannot be extended in this task, otherwise duration of whole project will be increased.

Interpreting and Analyzing Results

After completion of project, it is necessary to interpret and analyze project results against original project specification. This enables manager to evaluate success of the project and study variations in result against original specification in terms of cost, time and work. To interpret and analyze project results updated network diagram according to project progression is provided below, in addition to network diagram, outcome results are evaluated against project baseline.

Baseline Plan

Project manager uses various tools to create project plan. He/she then creates snapshot of the plan which is later utilized to compare against project performance. Project specification and plans are created during produce project plan servers as baseline to analyze variations with final outcomes of the project. Table below demonstrates baseline plan for the project.

	WI	Task Name	Baseline Duration	Baseline Start	Baseline Finish	Predecessi	Baseline Cost
0	**0**	**College Management System**	**45 days**	**Fri 7/31/15**	**Thu 10/1/15**		**रु 92,200.00**
1	1	Conduct feasibility study	5 days	Fri 7/31/15	Thu 8/6/15		रु 14,000.00
2	2	Produce outline specification	8 days	Fri 7/31/15	Tue 8/11/15		रु 10,000.00
3	3	Produce project plan	5 days	Fri 7/31/15	Thu 8/6/15		रु 2,500.00
4	4	Matching Resources effectively to the project	7 days	Fri 8/7/15	Mon 8/17/15	1	रु 8,400.00
5	**5**	**Implement the proposed project**	**25 days**	**Wed 8/12/15**	**Tue 9/15/15**	**1,2**	**रु 35,000.00**
6	5.1	Student Management	5 days	Wed 8/12/15	Tue 8/18/15		रु 0.00
7	5.2	Fee Management	5 days	Wed 8/19/15	Tue 8/25/15	6	रु 0.00
8	5.3	Faculty Management	5 days	Wed 8/26/15	Tue 9/1/15	7	रु 0.00
9	5.4	User Management	5 days	Wed 9/2/15	Tue 9/8/15	8	रु 0.00
10	5.5	Transaction Management	5 days	Wed 9/9/15	Tue 9/15/15	9	रु 0.00
11	6	Organize, analyze and interpret the outcome of the project	10 days	Wed 9/16/15	Tue 9/29/15	5,3	रु 10,000.00
12	7	Interpret and analyze the result in term of original project specification	10 days	Wed 9/16/15	Tue 9/29/15	4,5	रु 7,500.00
13	8	Make necessary recommendation	2 days	Wed 9/30/15	Thu 10/1/15	12,11	रु 4,800.00

Baseline Cost against Actual Cost

Comparison between actual cost and baseline cost shows cost variance of overall NRs. 3150.

	Task Name	% Work Complete	Baseline Cost	Actual Cost	Cost Variance
0	**College Management System**	**100%**	**रु 92,200.00**	**रु 89,050.00**	**(रु 3,150.00)**
1	Conduct feasibility study	100%	रु 14,000.00	रु 12,800.00	(रु 1,200.00)
2	Produce outline specification	100%	रु 10,000.00	रु 6,250.00	(रु 3,750.00)
3	Produce project plan	100%	रु 2,500.00	रु 4,000.00	रु 1,500.00
4	Matching Resources effectively to the project	100%	रु 8,400.00	रु 6,000.00	(रु 2,400.00)
5	**Implement the proposed project**	**100%**	**रु 35,000.00**	**रु 37,800.00**	**रु 2,800.00**
6	Student Management	100%	रु 0.00	रु 0.00	रु 0.00
7	Fee Management	100%	रु 0.00	रु 0.00	रु 0.00
8	Faculty Management	100%	रु 0.00	रु 0.00	रु 0.00
9	User Management	100%	रु 0.00	रु 0.00	रु 0.00
10	Transaction Management	100%	रु 0.00	रु 0.00	रु 0.00
11	Organize, analyze and interpret the outcome of the project	100%	रु 10,000.00	रु 9,000.00	(रु 1,000.00)
12	Interpret and analyze the result in term of original project specification	100%	रु 7,500.00	रु 6,000.00	(रु 1,500.00)
13	Make necessary recommendation	100%	रु 4,800.00	रु 7,200.00	रु 2,400.00

Cost Variance

Cost overrun report describes cost variance on project based on activities and resources as well as overall cost variance. These variance are caused by changes in time, and resource allocation during project performance.

COST OVERRUNS

Name	% Complete	Cost	Baseline Cost	Cost Variance
Conduct feasibility study	100%	रु 12,800.00	रु 14,000.00	(रु 1,200.00)
Produce outline specification	100%	रु 6,250.00	रु 10,000.00	(रु 3,750.00)
Produce project plan	100%	रु 4,000.00	रु 2,500.00	रु 1,500.00
Matching Resources effectively to the project	100%	रु 6,000.00	रु 8,400.00	(रु 2,400.00)
Implement the proposed project	100%	रु 37,800.00	रु 35,000.00	रु 2,800.00
Organize, analyze and interpret the outcome of the project	100%	रु 9,000.00	रु 10,000.00	(रु 1,000.00)
Interpret and analyze the result in term of original project specification	100%	रु 6,000.00	रु 7,500.00	(रु 1,500.00)
Make necessary recommendation	100%	रु 7,200.00	रु 4,800.00	रु 2,400.00

Name	Cost	Baseline Cost	Cost Variance
labour	रु 4,800.00	रु 6,000.00	(रु 1,200.00)
Analyst	रु 6,250.00	रु 10,000.00	(रु 3,750.00)
Designer	रु 4,000.00	रु 2,500.00	रु 1,500.00
Programmer	रु 6,000.00	रु 8,400.00	(रु 2,400.00)
Support	रु 37,800.00	रु 35,000.00	रु 2,800.00
QA Engineer	रु 9,000.00	रु 10,000.00	(रु 1,000.00)
Documentation Expert	रु 6,000.00	रु 7,500.00	(रु 1,500.00)
Expert Project Analyst	रु 7,200.00	रु 4,800.00	रु 2,400.00

Baseline Duration against Actual Duration

Overall variation of 1 days recorded while analyzing actual duration and planned duration. Each sub-tasks shows variation in duration. Table below demonstrates duration variance.

	WI	Task Name	% Work Complete	Baselin Duratio	Duratio	Duration Variance
0	**0**	**WBS**	**100%**	**45 days**	**46 days**	**1 day**
1	1	Conduct feasibility study	100%	5 days	4 days	-1 day
2	2	Produce outline specification	100%	8 days	5 days	-3 days
3	3	Produce project plan	100%	5 days	8 days	3 days
4	4	Matching Resources effectively to the project	100%	7 days	5 days	-2 days
5	**5**	**Implement the proposed project**	**100%**	**25 days**	**27 days**	**2 days**
6	5.1	Student Management	100%	5 days	6 days	1 day
7	5.2	Fee Management	100%	5 days	7 days	2 days
8	5.3	Faculty Management	100%	5 days	6 days	1 day
9	5.4	User Management	100%	5 days	4 days	-1 day
10	5.5	Transaction Management	100%	5 days	4 days	-1 day
11	6	Organize, analyze and interpret the outcome of the project	100%	10 days	9 days	-1 day
12	7	Interpret and analyze the result in term of original project specification	100%	10 days	8 days	-2 days
13	8	Make necessary recommendation	100%	2 days	3 days	1 day

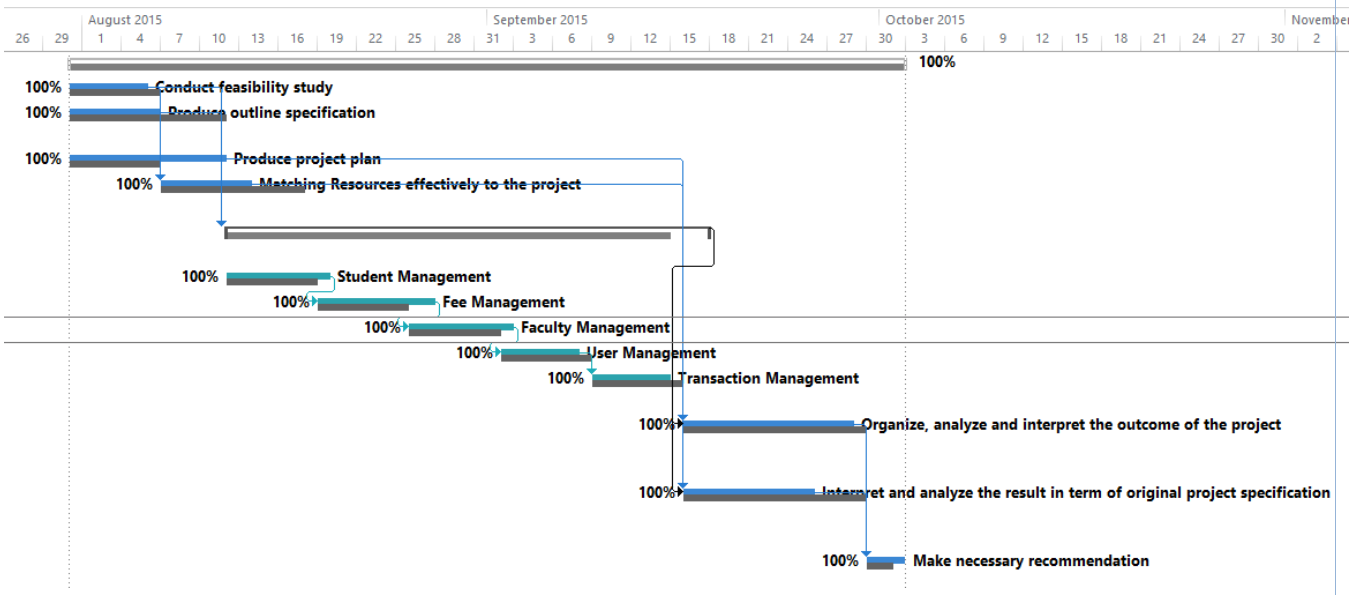
Baseline Work against actual work

Planned work is analyzed against actual work perform to calculate work variance. This helps to analyze how actual performance is different from planning in terms of total works done in each activities. Analyze result shows 16 hours extra actual is done in project than planned work.

	WI	Task Name	% Work Complete	Baseline Work	Work	Work Variance
0	**0**	**WBS**	**100%**	**2,400 hrs**	**2,416 hrs**	**16 hrs**
1	1	Conduct feasibility study	100%	240 hrs	192 hrs	-48 hrs
2	2	Produce outline specification	100%	320 hrs	200 hrs	-120 hrs
3	3	Produce project plan	100%	80 hrs	128 hrs	48 hrs
4	4	Matching Resources effectively to the project	100%	336 hrs	240 hrs	-96 hrs
5	**5**	**Implement the proposed project**	**100%**	**800 hrs**	**1,080 hrs**	**280 hrs**
6	5.1	Student Management	100%	0 hrs	48 hrs	48 hrs
7	5.2	Fee Management	100%	0 hrs	56 hrs	56 hrs
8	5.3	Faculty Management	100%	0 hrs	48 hrs	48 hrs
9	5.4	User Management	100%	0 hrs	32 hrs	32 hrs
10	5.5	Transaction Management	100%	0 hrs	32 hrs	32 hrs
11	6	Organize, analyze and interpret the outcome of the project	100%	320 hrs	288 hrs	-32 hrs
12	7	Interpret and analyze the result in term of original project specification	100%	240 hrs	192 hrs	-48 hrs
13	8	Make necessary recommendation	100%	64 hrs	96 hrs	32 hrs

Tracking Gantt chart

Tracking Gantt chart is used for comparing actual project performance against planned baseline Gantt chart. Two line in timeline describes actual and planned time schedule for each task. Tracking Gantt chart



Evaluation Review

This document used PERT (project evaluation and review technique) to evaluate original as well as final outcome of the project- College Management System. PERT is tool used by project planner to estimate project duration and provide flexibility in project by identifying critical path. To perform PERT, network diagram was prepared which describes start time, finish time, resources etc. of each activities in project.

Then, final outcomes during project performance was interpreted and analyzed against planned specification. Baseline prepared during specification and planning phases is utilized to analyze final outcome. In terms of cost, evaluation shows positive variance. But extended work and duration is required in project than actual planning.

References

TUTORIALSPOINT (n.d.) PERT Estimation Technique [Online] Available: http://www.tutorialspoint.com/management_concepts/pert_estimation_technique.htm Accessed [11/23/2015]

Task 3 II [3.3]

Make recommendation and justify areas of for further considerations of you project.

Introduction

Formulation, selection, plan and implementation of the project of Samajik College has already been completed. Progress report and Project output results are organized and then analyzed and interpreted. College Management system for Samajik College was selected after feasibility study. As the project is completed it is essential to identify the project limitation and provide possible recommendation for future consideration.

Absence of proper data backup

Developed system does not have proper database backup mechanism. User are not able to create backup of the database and restore it if required from the developed system itself. If user deletes important data by mistake there is no method in system to get it back. Technical staff can use Microsoft server to get backup manually but that is not simple process for general user. As whole college data is stored on developed system, it is must to have proper contingency plan in case of data loss. Losing college data can have great impact on productivity/service of the college.

Recommendation

It is essential for system that manages critical data such as transaction history, student data etc. to have proper database backup plan as a contingency plan. Developed system should include Database backup and restore module so that user/admin can create backup of database and restore them when required.

Absent of Password Recovery

Implemented system uses login form at startup for authentication and authorization process. User requires right combination of username and password to access the system. While reviewing system it is found that absence of password recovery mechanism can lead to complicated situation. Virtually any system that requires authentication, offers password recovery feature in case user has forgot his/her password.

In current system, if user forgets his username or password he/she will require to request to technical team or administrator to reset the password and wait until work is done. If administrator forgets his/her password he has only choice to wait for technical team to handle it. Application becomes useless in scenario, causing delay in daily work of organization.

Recommendation

To overcome the project limitation as stated above, system should implement password recovery feature. Implementation of proper password recovery module in developed system will enable user to recover password themselves when required. They will not need to wait for technical team to look into it. User table in database should include email and security question attributes. System can design and implement a password recovery module that will send password email to associated email address. Another option will be user would able to user forgot password module and security question to retrieve forgot password.

Vulnerable to SQL injection

SQL injection is a method of data stealing and damaging by utilized user input mechanism. Right combination of query string is passed through user input to get information about database. This system is generally used for un-authorized access to the system. Login system requires user authentication but with SQL injection access to the system in possible. Hacker may use SQL inject in developed system to get database information, access the system, view data, modify data etc.

Recommendations

Following methodologies are recommended for the project:

- Use parameterized query
- Proper use of input validation to filter out quote, NULL, double quote, slash etc.
- Not reveal original error massage to user

Use of parameterized query is best defense against SQL injection. I prevents execution of SQL query from user input. User input will be taken as value and will not be combined to perform SQL query. Similarly, validation to filter keywords as stated above will block some of the keywords used in SQL query. And finally it is recommended to not reveal original error massage to user, else he/she can study error massage to identify database name, table names, attributes name etc.

Summary

This paper identified various limitations in developed project. Impact of such limitation on the project is described. System has several limitations such as no database backup plan, no password recovery mechanism and no anti-SQL injection mechanism in the system. This paper identifies and recommends possible solution to be considered in future. It is recommended to use proper validation and implement database backup as well as password recovery mechanism in the system.

Task 4 I [4.1]

Produce the record of all project procedure used.

Introduction

Samajik College is TU based international college. College did not have technology infrastructure such as software system, network system or website to organize college information. Hence to automate information management, college wanted to develop necessary system. This project required to plan, implement and evaluate the necessary technology system for the college. This document records all procedure used in project. Reader will able to understand all information about completed project including phase of project, various project plans utilized, tools and techniques used for planning design etc.

Scope

Project Scope

- Conduct feasibility study to analyze fitness of project
- Produce Outline specification
- Produce Project plan
- Match resources
- Implement project plan
- Organize, analyze and interpret the outcome of the project
- Interpret and analyze the result in term of original project specification
- Make necessary recommendation for future consideration

Product Scope

- Administrator will able to create and maintain information about student, teacher, faculty, class etc. **Page Name**
- Teachers will able to upload assignment, documents, images etc.
- Student will able to join class and download/submit assignment
- Any user will have feature of private messaging
- Users will get notification for each file upload, comments, and message.
- Admin will able to send notices related to finance and exams to any user.

Possible Solutions

During feasibility study following alternative solutions are identified.

S.N.	Solution Title	Description
1.	An appropriate software solution	Software development to support various activities of college such as student information management, fee management , grade management etc.
2.	Network infrastructure	A domain network to support various equipment of college such as centralized management, network security etc.
3.	Web application	A web based application to manage information and provide services such as assignment, library, blogs etc.

Evaluating each alternative solution based on set criteria, software system was selected as most feasible solution.

Project Objective

These are the main objectives of this project.

- To formulate, Plan, Design and Implement windows based application for "Samajik College "
- To deliver complete project by due date and budget
- Fulfill all requirements stated in SRS document and project deliverable

Project Constraints

Following are the constraint set by Samajik College for the project.

- Budget: NRS. 100000 +/- **10%**
- Schedule: 3 Months
- System should able to utilize resources from existing system
- Developed system should be passed through Quality testing and assurance

Project Estimation

Estimation in terms of Budget, resources and time is analyzed. Project will be designed and planned based on these estimations. Estimation prepared for category during outline specification phase is demonstrated using table below.

Budget

S.N.	List of activates/Tasks	Man-Day	Rate (NRS)	Amount
1.	Conduct Feasibility Study	30	200	6,000
2.	Produce Outline Specification	40	250	10000
3.	Produce project plan	10	250	2500
4.	Matching Resources effectively to the project	30	200	6000
5.	Implement the proposed project	80	350	28000
6.	Organize, analyze and interpret the outcome of the project	40	250	10000
7.	Interpret and analyze the result in term of original project specification	26	250	6500
8.	Make necessary recommendation	20	600	12000
9.	**Total**			81000
10.	**VAT (13%)**			10530
11	**Grand Total**			91530
Amount in words	Ninety one thousand five hundred and thirty			

Resources

S.N.	List of activates/Tasks	Resource Name	Type (Work/Cost/ Material)	Standard Rate (NRs)
1.	Conduct Feasibility Study	Labor	**Work**	200
2.	Produce Outline Specification	Analyst	**Work**	250
3.	Produce project plan	Designer	**Work**	250
4.	Matching Resources effectively to the project	Programmer	**Work**	200
5.	Implement the proposed project	Support	**Work**	350
6.	Organize, analyze and interpret the outcome of the project	QA Engineer	**Work**	250
7.	Interpret and analyze the result in term of original project specification	Documentation Expert	**Work**	250
8.	Make necessary recommendation	Expert Support	**Work**	600

Time

S.N.	List of activates/Tasks	Duration
1.	Conduct Feasibility Study	5
2.	Produce Outline Specification	8
3.	Produce project plan	5
4.	Matching Resources effectively to the project	7
5.	Implement the proposed project	25
6.	Organize, analyze and interpret the outcome of the project	10

Project Planning and Scheduling

After feasible solution selection and preparing outline specification for project, project planning and scheduling is prepared based on the outline specification.

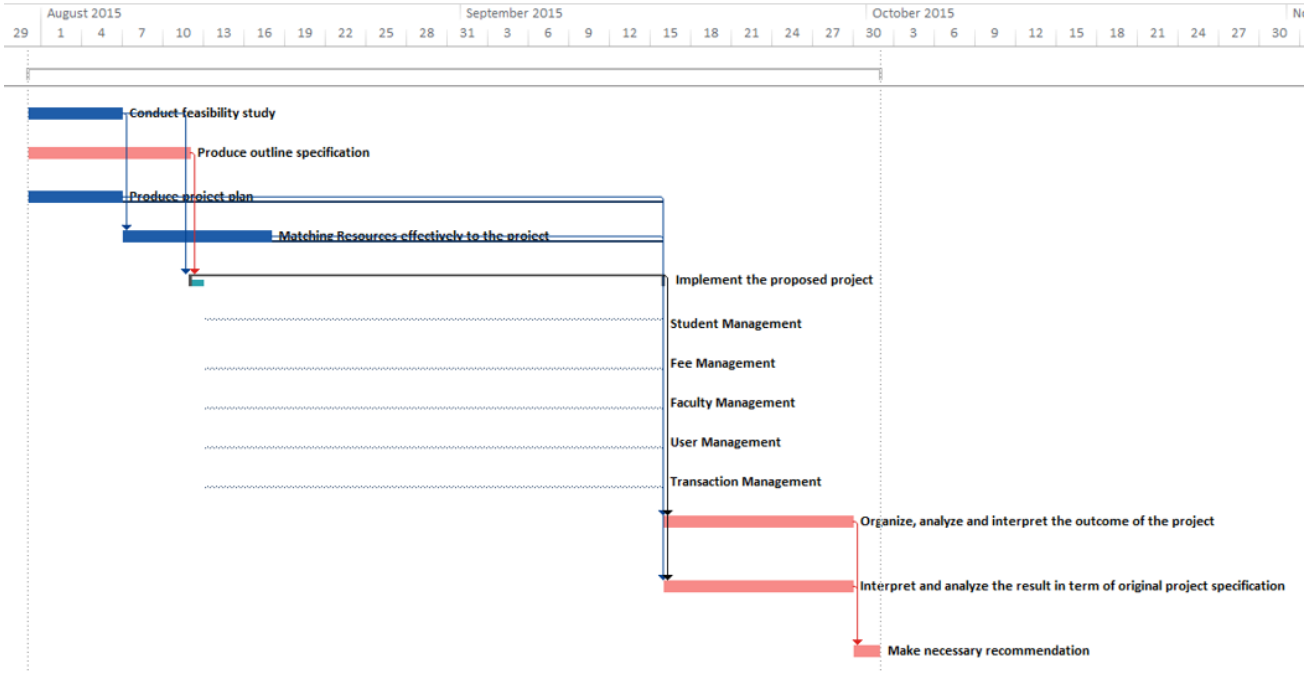
Work breakdown structure

WBS is utilized in project of breaking large project in smaller phases as shown in table below.

WI	Task Name	Durati	Start	Finish	Predecessors	Cost
0	**College Management System**	**45 days**	**Fri 7/31/15**	**Thu 10/1/15**		**रु 92,200.00**
1	Conduct feasibility study	5 days	Fri 7/31/15	Thu 8/6/15		रु 14,000.00
2	Produce outline specification	8 days	Fri 7/31/15	Tue 8/11/15		रु 10,000.00
3	Produce project plan	5 days	Fri 7/31/15	Thu 8/6/15		रु 2,500.00
4	Matching Resources effectively to the project	7 days	Fri 8/7/15	Mon 8/17/15	1	रु 8,400.00
5	**Implement the proposed project**	**25 days**	**Wed 8/12/15**	**Tue 9/15/15**	**1,2**	**रु 35,000.00**
5.1	Student Management					रु 0.00
5.2	Fee Management					रु 0.00
5.3	Faculty Management					रु 0.00
5.4	User Management					रु 0.00
5.5	Transaction Management					रु 0.00
6	Organize, analyze and interpret the outcome of the project	10 days	Wed 9/16/15	Tue 9/29/15	5,3	रु 10,000.00
7	Interpret and analyze the result in term of original project specification	10 days	Wed 9/16/15	Tue 9/29/15	4,5	रु 7,500.00
8	Make necessary recommendation	2 days	Wed 9/30/15	Thu 10/1/15	12,11	रु 4,800.00

Gantt chart

Project scheduling plan was prepared using Gantt chart as shown below.



Project Management Plan

Following project management plans were prepared:

Line of Communication

S.N.	Document/Item to be reported and communicated	Date	Distribution Method: (Present Email, Postal)	Executive Sponsors	Steering Committee	Project Manager	System Analyst	Technical Coordinator	Team Leader	Software Developer	Designer	Database Designer	Quality Analyst	Document Writer	
1.	Project status report		Email/Presentation	To	To	From									
2.	Project Review		Email/Presentation	To	To	From									
3.	Team report (Business)		Email/Meeting			To	From								
4.	Team Report (Technical)		Email/Meeting			To		From							
5.	Product Report [UI, Database, Quality, document]		Email/Meeting/Present			To			From						
6.	Product Module Report		Present						To	From					
7.	UI Design Report		Present						To		From				
8.	Database Report		Present						To			From			
9.	Quality test report		Present						To				From		
10.	Document Report		Present						To					From	
11.	Team Moral		Meeting/Presentation						From	To	To	To	To	To	
	EMAIL: item transmitted electronically via electronic mail														
	POSTAL: item transmitted in hardcopy via mail														
	PRESENT: presentation conducted in-person at physical location														

Governance plan

Level of Management	Project Governance Roles	Key Responsibilities
Senior Management	**Corporate Strategic Planning Group**	Prepare strategic Plans
	Executive Sponsors	Manage sponsorships
	Project Steering Committee	Ensure project sustainability
Middle Management	**Project Manager**	Control Whole project and report steering committee
	Business visionary	Provide business strategy
	Technical Coordinators	Provide technical strategy
Operational Management	**Team Leader**	Lead project development team
	System Analyst	Design system model according to business requirements
	Solution Developer	Develop/Implement system
	Solution Tester	Carryout test on developed system
	Designer	Develop UI models
	Database Expert	Develop Database Model
	Document Expert	Prepare Documentation

Risk Management Plan

ID	Risks	Likelihood (High/Medium/ Low)	Impact (High/ Medium/ Low)	Mitigation Strategy	Responsible Person	Date
1.	Sponsor withdrawal from the project	Low	High	Ensure smooth project management	Project manager	
2.	Uneven project management	Low	High	Give suggestion to project manager	Steering Committee	
3.	Failed to deliver project on time	Low	High	Control the project according to plans and apply required changes	Project manager	
4.	Bugs in developed product	High	Low	Test and report to development team	Test team	
5.	Data corruption	Medium	Medium	Keep backup of all data	S.D. team	
6.	Team loses motivation	Medium	Medium	Motivate the team	Team Leader	

Change Management Plan

Project Title: College Management system for Samajik College			
Change Request			
Change Request ID: 01		Date of Request:	Change Requested By:
Items to be Changed			
Description of Change	Description here		
Estimation	Estimated cost, time, resources for the change		
Impact	Impact of new change on the system		
Change Evaluation			
What is effected		Evaluation of changes	
Name of the Evaluator:		Signature:	
Change Approval			
Accepted: Yes	Rejected:	Signature:	Date:2015-11-29
Comment:			
Change Implementation			
Date Implemented:	Name of the Implementer:		Signature:
Comments:			

Product Feature

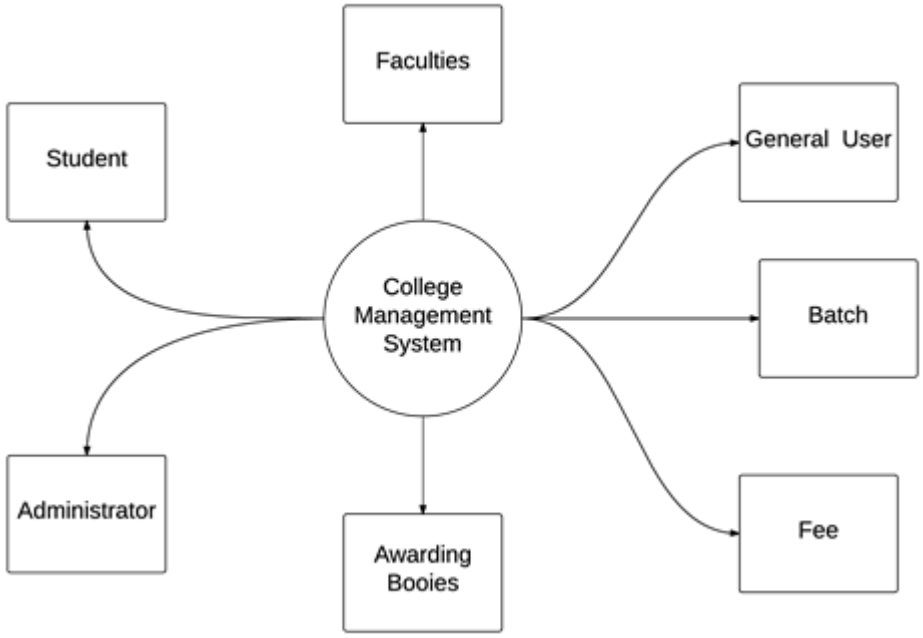
Developed product has following modules:

1. Login
2. User Management
3. Role Management
4. Student Management
5. Fee Management
6. Payment Management
7. Faculty Management
8. Batch Management
9. Dashboard

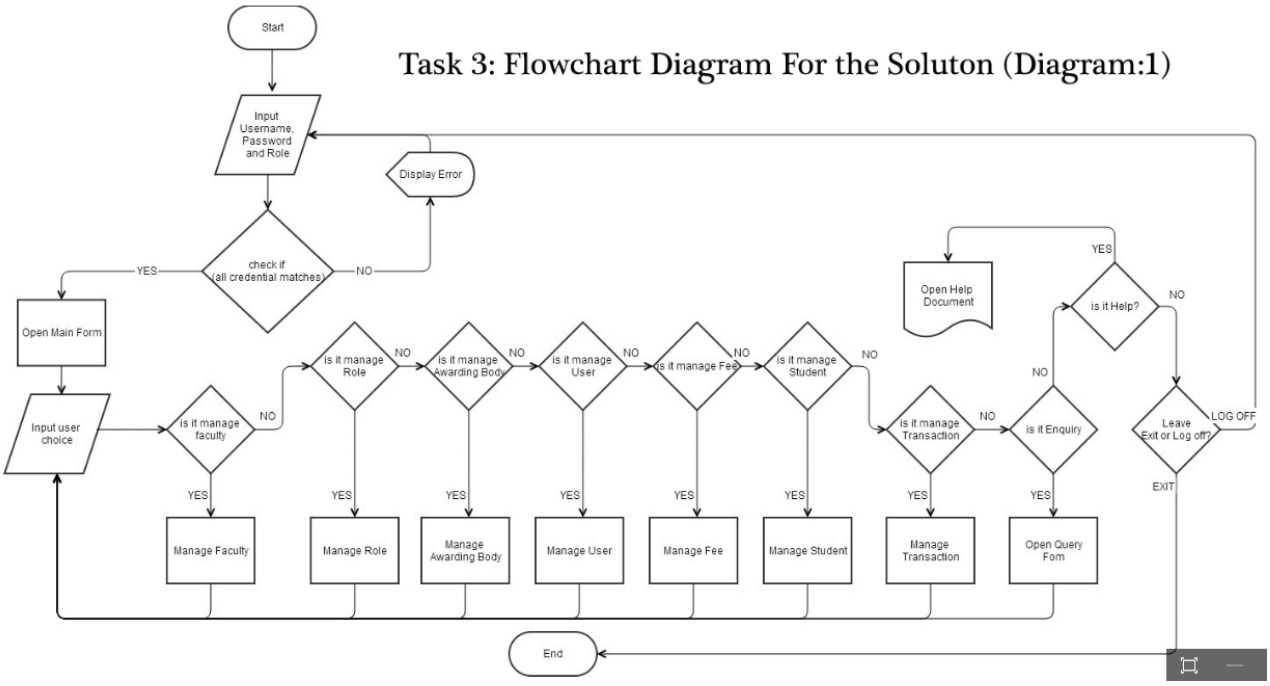
Product Design

Developed system was designed using several tools and technologies such as context diagram, flowchart and schema diagram. Produced product diagram is given below.

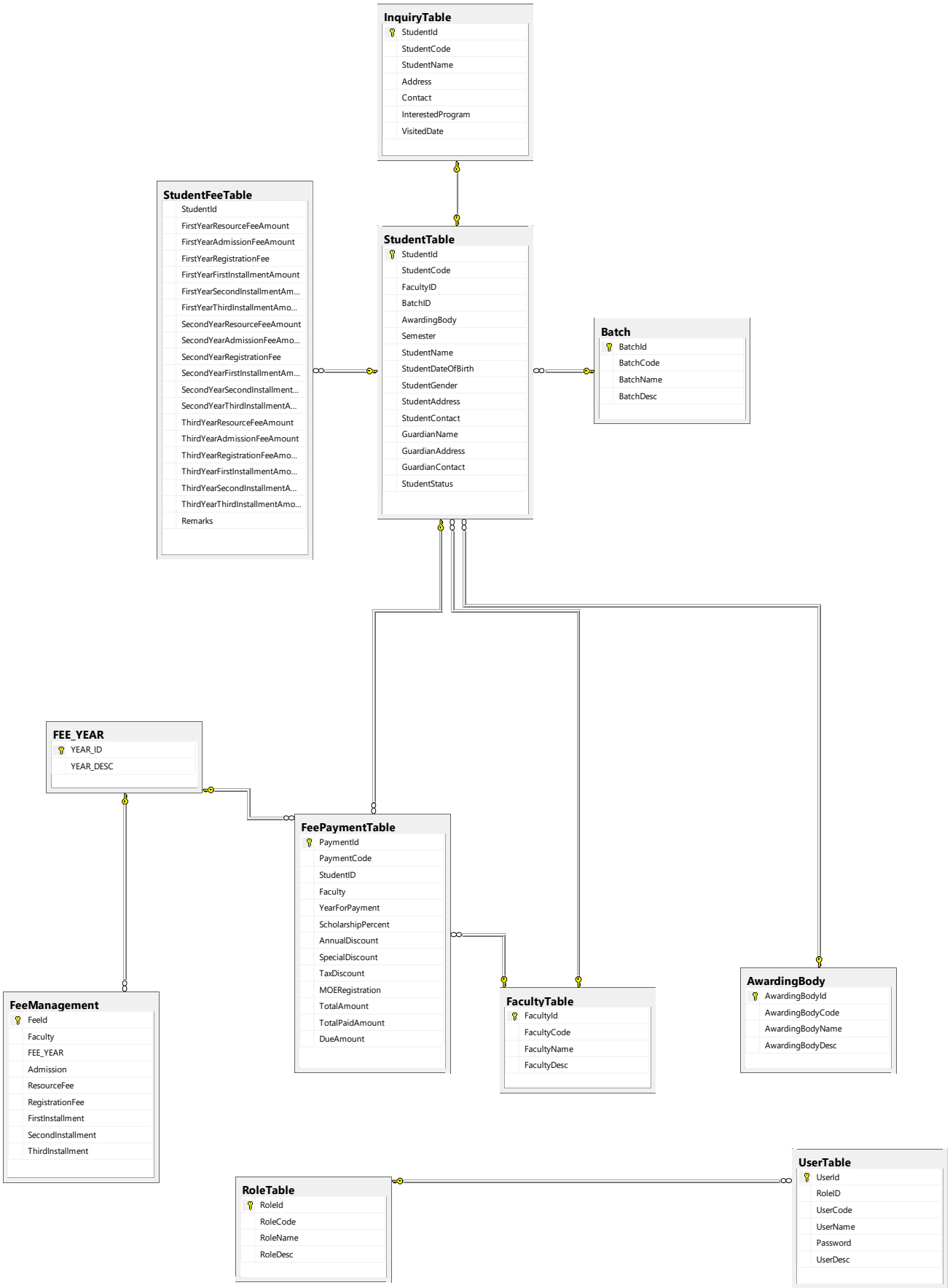
Context Diagram



Flowchart

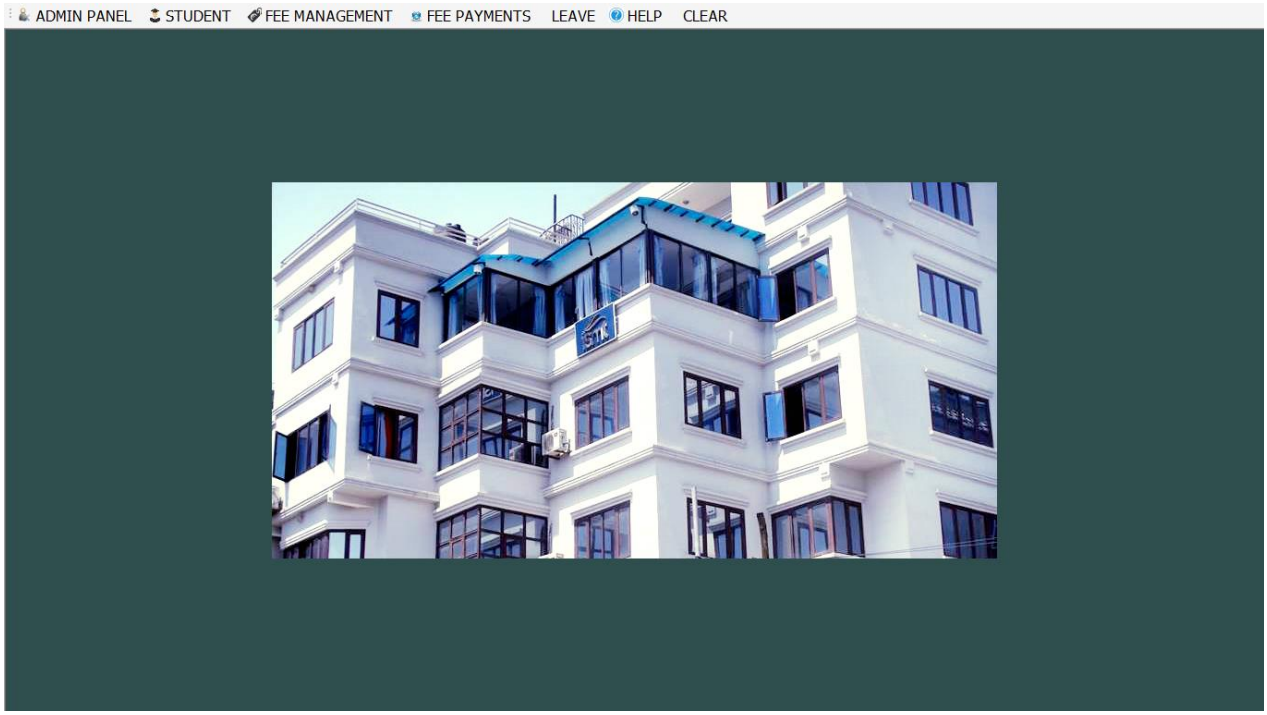


Database Design



Implementation

Proposed system is implemented using Windows form and C#.net programming technology. UI design using windows form and coding using C# is recorded below.




```
namespace ISMT_FEE_MANAGEMENT_BY_SECTION_D
{
    public partial class ProjectMainForm : Form
    {
        public ProjectMainForm()
        {
            InitializeComponent();
        }

        private void mANAGEFACULTYToolStripMenuItem_Click(object sender, EventArgs e)
        {
            pnlContainer.Controls.Clear();
            Faculty Faculty= new Faculty();
   Faculty.TopLevel = false;
   pnlContainer.Controls.Add(Faculty);
   Faculty.FormBorderStyle = System.Windows.Forms.FormBorderStyle.None;
    Faculty.Dock = DockStyle.Fill;
    Faculty.Show();
        }

        private void mANAGEBATCHToolStripMenuItem_Click(object sender, EventArgs e)
        {
            pnlContainer.Controls.Clear();
            ManageBatch batch = new ManageBatch();
```

Conclusion

This paper recorded all necessary procedure used by project. Document can be useful while reviewing project and preparing presentation for stakeholders.

Task 4 II [4.2]

Use an agreed format and appropriate media to present the outcome of the project to an audience.

COLLEGE MANAGEMENT SYSTEM

PROJECT DESIGN IMPLEMENTATION AND EVALUATION FOR SAMAJIK COLLEGE

Task 4II [4.2]

Atut Gorkhali
Fourth Semester/ HND

INTRODUCTION

- Samajik College in international college based in Kathmandu
- Has several branch offices located all over the Country
- College Does not have any technology to automate management of information
- College has hired team to plan, implement and evaluate project
- This project would automate information management

PURPOSE

- To formulate, Plan, Design and Implement windows based application for "Samajik College "
- To deliver complete project by due date and budget
- Fulfill all requirements stated in SRS document and project deliverable.
- To evaluate final outcome of the project

SCOPE

Project Scope

- Conduct feasibility study to analyze fitness of project
- Produce Outline specification
- Produce Project plan
- Match resources
- Implement project plan
- Organize, analyze and interpret the outcome of the project
- Interpret and analyze the result in term of original project specification
- Make necessary recommendation for future consideration

Product Scope

- Administrator will able to create and maintain information about student, teacher, faculty, class etc. ***Page Name***
- Teachers will able to upload assignment, documents, images etc.
- Student will able to join class and download/submit assignment
- Any user will have feature of private messaging
- Users will get notification for each file upload, comments, and message.
- Admin will able to send notices related to finance and exams to any user.

OUTLINE SPECIFICATION : BUDGET

S.N.	List of activates/Tasks	Man-Day	Rate (NRS)	Amount
1.	Conduct Feasibility Study	30	200	6,000
2.	Produce Outline Specification	40	250	10000
3.	Produce project plan	10	250	2500
4.	Matching Resources effectively to the project	30	200	6000
5.	Implement the proposed project	80	350	28000
6.	Organize, analyze and interpret the outcome of the project	40	250	10000
7.	Interpret and analyze the result in term of original project specification	26	250	6500
8.	Make necessary recommendation	20	600	12000
9.	Total			81000
10.	VAT (13%)			10530
11	Grand Total			91530
Amount in words	Ninety one thousand five hundred and thirty			

OUTLINE SPECIFICATION : RESOURCE

S.N.	List of activates/Tasks	Resource Name	Type (Work/Cost/ Material)	Standard Rate (NRs)
1.	Conduct Feasibility Study	Labor	Work	200
2.	Produce Outline Specification	Analyst	Work	250
3.	Produce project plan	Designer	Work	250
4.	Matching Resources effectively to the project	Programmer	Work	200
5.	Implement the proposed project	Support	Work	350
6.	Organize, analyze and interpret the outcome of the project	QA Engineer	Work	250
7.	Interpret and analyze the result in term of original project specification	Documentation Expert	Work	250
8.	Make necessary recommendation	Expert Support	Work	600

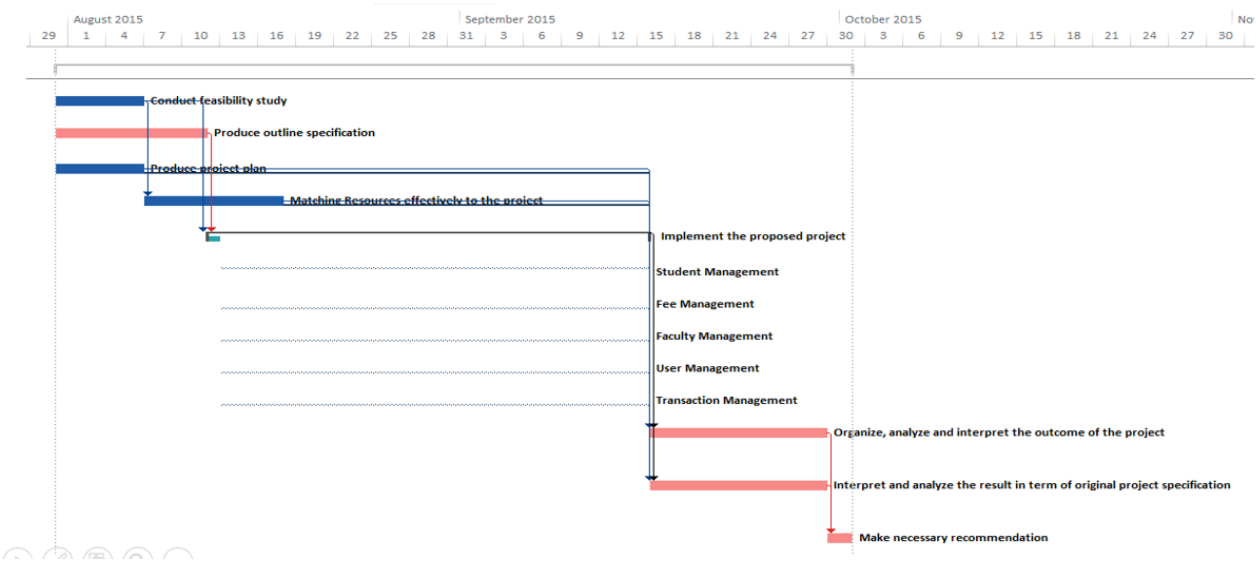
OUTLINE SPECIFICATION: DURATION

S.N.	List of activates/Tasks	Duration
1.	Conduct Feasibility Study	5
2.	Produce Outline Specification	8
3.	Produce project plan	5
4.	Matching Resources effectively to the project	7
5.	Implement the proposed project	25
6.	Organize, analyze and interpret the outcome of the project	10
7.	Interpret and analyze the result in term of original project specification	10
8	Make necessary recommendation	5
Total		70 Days

WORK BREAKDOWN STRUCTURE

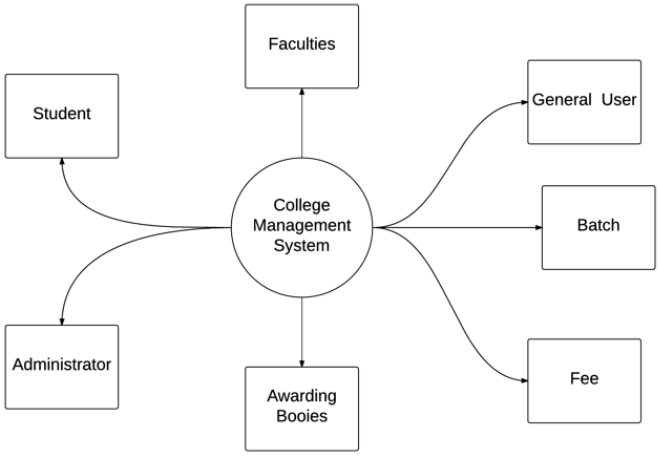
Wi	Task Name	Durati	Start	Finish	Predecessors	Cost
0	**College Management System**	**45 days**	**Fri 7/31/15**	**Thu 10/1/15**		**रु 92,200.00**
1	Conduct feasibility study	5 days	Fri 7/31/15	Thu 8/6/15		रु 14,000.00
2	Produce outline specification	8 days	Fri 7/31/15	Tue 8/11/15		रु 10,000.00
3	Produce project plan	5 days	Fri 7/31/15	Thu 8/6/15		रु 2,500.00
4	Matching Resources effectively to the project	7 days	Fri 8/7/15	Mon 8/17/15	1	रु 8,400.00
5	**Implement the proposed project**	**25 days**	**Wed 8/12/15**	**Tue 9/15/15**	**1,2**	**रु 35,000.00**
5.1	Student Management					रु 0.00
5.2	Fee Management					रु 0.00
5.3	Faculty Management					रु 0.00
5.4	User Management					रु 0.00
5.5	Transaction Management					रु 0.00
6	Organize, analyze and interpret the outcome of the project	10 days	Wed 9/16/15	Tue 9/29/15	5,3	रु 10,000.00
7	Interpret and analyze the result in term of original project specification	10 days	Wed 9/16/15	Tue 9/29/15	4,5	रु 7,500.00
8	Make necessary recommendation	2 days	Wed 9/30/15	Thu 10/1/15	12,11	रु 4,800.00

GANTT CHART



PRODUCT DESIGN: CONTEXT DIAGRAM

- Highest level overview of the project



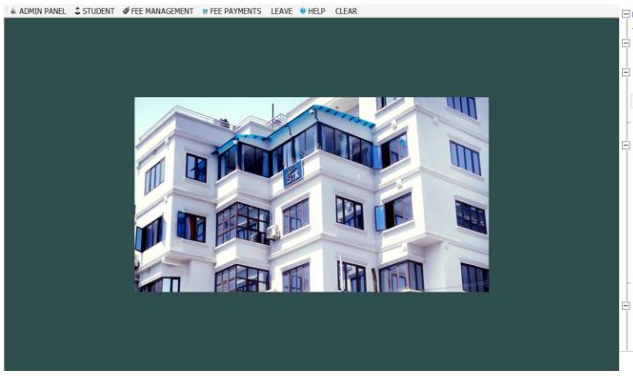
DATABASE OBJECTS

- Student Table
- User Table
- User Role Table
- Fee Table
- Transaction Table
- Faculty Table
- Year Management Table
- Batch Table
- Awarding Body table

PROJECT FEATURES

- Student Management Module
- User Management Module
- Faculty Management Module
- Fee Management Module
- Transaction Management Module
- Awarding Body Management Module
- Batch Management

PRODUCT IMPLEMENTATION




```
namespace ISMT_FEE_MANAGEMENT_BY_SECTION_D
{
    public partial class ProjectMainForm : Form
    {
        public ProjectMainForm()
        {
            InitializeComponent();
        }

        private void mANAGEFACULTYToolStripMenuItem_Click(object sender, EventArgs e)
        {
            pnlContainer.Controls.Clear();
            Faculty Faculty= new Faculty();
Faculty.TopLevel = false;
pnlContainer.Controls.Add(Faculty);
Faculty.FormBorderStyle = System.Windows.Forms.FormBorderStyle.None;
 Faculty.Dock = DockStyle.Fill;
 Faculty.Show();
        }

        private void mANAGEBATCHToolStripMenuItem_Click(object sender, EventArgs e)
        {
            pnlContainer.Controls.Clear();
            ManageBatch batch = new ManageBatch();
```

CONCLUSION

- Product UI is developed using Windows form technology
- System is developed using Visual studio and C# programming language
- Project can be altered according to change management plan
- Developed product is able to satisfy business requirement of the system
- Developed system in QA passed