

NETACODE -A SOFTWARE COMPANY VISITING REPORT

The report is visiting a software company for **Course title:Information System Design with industrial attachment Sessional** Course and **Course Code:CSE 3210** in Computer Science and Engineering.

by

Mst.Habiba Hena Sumi(200101070)
Most.Jannat-UI-Ferdoush(200101068)
Md.Talath Un Nabi(200101076)
Ferdous Tahsin(200101079)



Submitted To:

Teacher name:Ananna Hoque Shathi
Department of Computer Science and Engineering(CSE)
Bangladesh Army University of Science and Technology(BAUST)

.....
signature of the teacher

Contents

1	Systems Concepts and the Information Systems Environment	5
1.1	Introduction	5
1.2	NetaCode goal	5
1.3	Characteristic of System	6
1.4	Elements of System	6
1.5	Types of Systems	7
1.6	Conclusion	8
2	The System Development Life Cycle	9
2.1	Introduction	9
2.2	Recognition of Need	10
2.3	Feasibility Study	10
2.4	Analysis	10
2.5	Design	11
2.6	Implementation	11
2.7	Post termination and Maintenance	11
2.8	Conclusion	12
3	The Role of the System Analyst	13
3.1	Introduction	13
3.2	System Analyst	13
3.2.1	Technical skills include	13
3.3	The attributes are	14
3.4	Conclusion	14
4	Systems Planning and the Initial Investigation	15
4.1	Bases for planning in system analysis	15
4.2	Strategic MIS Planning	15
4.3	Strategies for Determining Information Requirements	15
4.4	Conclusion	16
5	Information Gathering	17
5.1	Introduction	17
5.2	How Netacode collects information from clients	17
5.3	Information about the firm	17
5.4	Information Gathering Method – Questionaries	18
5.5	Conclusion	22
6	The Tools of Structured Analysis	23
6.1	Structured Analysis	23
6.2	Structured Analysis Tools	23
6.3	Information Gathering Tools	23
6.4	Conclusion	26

7	Feasibility Study	27
7.1	Introduction	27
7.2	Need of Feasibility Study in The Company	27
7.3	System Performance	27
7.4	Identification of Specific System Objective	28
7.5	Feasibility Consideration	28
7.5.1	Economic Feasibility	28
7.5.2	Technical Feasibility	28
7.5.3	Behaviour Feasibility	28
7.6	Conclusion	29
8	Cost/Benefit Analysis	30
8.1	Intoduction	30
8.2	Data analysis	30
8.3	cost	30
8.3.1	Cost analysis for a existing project	31
8.4	Benefit	32
8.4.1	Benefit analysis for a existing project	32
8.5	Conclusion	34
9	The Process and Stages of System Design	35
9.1	Introduction	35
9.2	Logical and Physical Design	35
9.3	Structured Design	36
9.4	HIPO Diagram	36
9.5	IPO Diagram	37
9.6	Conclusion	37
10	Input/Output and Forms Design	38
10.1	Introduction	38
10.2	Input Design	38
10.3	Data Input Methods	38
10.4	Output Design	38
10.4.1	Objectives of Output Design	39
10.5	Forms Design	39
10.6	Types of Forms	39
10.7	Employment Form	40
10.8	Conclusion	40

List of Figures

1.1	Task Interdependence in a Computer – Based Subsystem	6
1.2	Categories of information related to managerial levels and the decision managers make.	8
2.1	System development life cycle	9
2.2	design of a system	12
3.1	Interpersonal and Technical Skills	14
4.1	Netacode jobholders and ours picture moment of getting information.	16
5.1	Information Collection	17
5.2	Organization Chart of Netacode	18
6.1	Information Gathering Tools	24
6.2	Data Flow Diagram Symbols	24
6.3	Data Flow Diagram of Netacode	25
6.4	Netacode billing system	26
7.1	System performance diadram	28
7.2	selecting best candidate system	29
8.1	using hardware list	30
8.2	Time requirement for a website ECNHOST made by NetaCode	31
8.3	NetaCode services	34
9.1	system goes through Logical and Physical design	36
9.2	Structured Design Method	36
9.3	HIPO Diagram for a project by NetaCode	37
9.4	IPO Diagram of NetaCode Implemented project	37
10.1	Employee leave request form	39
10.2	Joning letter of Netacode	40

Chapter 1

Systems Concepts and the Information Systems Environment

1.1 Introduction

System analysis and design is a process that many companies use to evaluate particular business situations and develop ways to improve them through more optimal methods.



NetaCode Inc is one of the upgrowing diversified IT solutions Provider Company Registered in as "NetaCode" at Bangladesh in 2018. Later in 2020 it's incorporated as "NetaCode Inc" at Delaware, USA.

1.2 NetaCode goal

Netacode goal is simple and one that combines creativity with the latest research and development in the tech world. they are a very customer-oriented company, putting our customers first and always focusing on gaining and deserving the trust of every single one of their customers. So, they listen to their customers, stay at the cutting edge of the latest trends in tech research, and constantly develop better web hosting products and services which enable them to fulfill this vision better and better every day.

To provide trouble-free, customer-focused, reliable, and affordable web hosting services. they simply want to continue to operate a profitable web hosting company that makes customers happy. Since the beginning, they have backed they rock solid hosting solutions and top-notch infrastructure with the best customer service and technical support. A common feeling about the technology field

is it's all about machines, yes, It does take machines but, Host Pair also knows it takes good people to run a well-oiled machine. Yes, a successful business needs to be committed to client solutions, innovation, creativity, and a warm, caring attitude to all of our customers' business needs. We don't just provide 24x7 support. they really do listen and care.

1.3 Characteristic of System

Organization Their organization has a branch in Dinajpur district. Netacode is a multinational software company. Main office in Dhaka in Bangladesh. Their organizations are certainly very beautiful. 4 storied building and their number of rooms is 7.

Interaction It is defined by the manner in which the components operate with each other. For example, in an organization, purchasing department must interact with production department and payroll with personnel department.

Interdependence Interdependence means how the components of a system depend on one another. Netacode has different branch in bangladesh, the branches are interdependent each other.

Integration Integration is concerned with how a system's components are connected together. It means that the parts of the system work together within the system even if each part performs a unique function. Netacode each branch connects in every work with each other.

Central Objective The objective of a system must be central. It may be real or stated. It is not uncommon for an organization to state an objective and operate to achieve another. Netacode's central objective is to provide trouble-free, customer-focused, reliable, and affordable web hosting services.

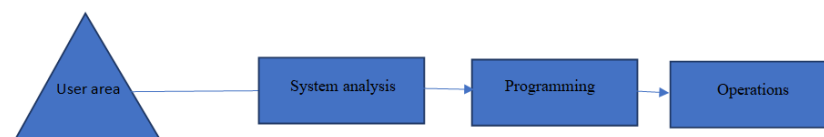


Figure 1.1: Task Interdependence in a Computer – Based Subsystem

1.4 Elements of System

Outputs and Inputs

- The main aim of a Netacode is to produce an output which is useful for its user.
- Output is the outcome of processing.

Processor(s)

- The processor is the element of Netacode that involves the actual transformation of input into output.

control

- Netacode controls the pattern of activities governing input, processing, and output.

Feedback

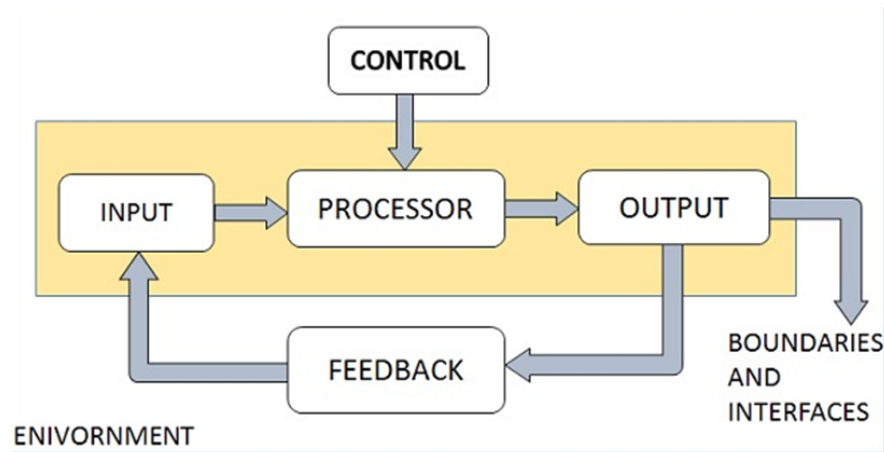
- Feedback provides the control in a dynamic system. Netacode follow always client feedback, future work doing follow the feedback .
- Positive feedback is routine in nature that encourages the performance of the system.
- Negative feedback is informational in nature that provides the controller with information for action.

Environment

- The environment is the “supersystem” within which an organization operates.

Boundaries and Interface

- A system should be defined by its boundaries. Boundaries are the limits that identify its components, processes, and interrelationship when it interfaces with another system.
- Netacode has boundaries that determine its sphere of influence and control.



1.5 Types of Systems

Netacode is a open and close system

Open or Closed Systems

- An open system must interact with its environment. It receives inputs from and delivers outputs to the outside of the system. For example, an information system which must adapt to the changing environmental conditions.
- A closed system does not interact with its environment. It is isolated from environmental influences. A completely closed system is rare in reality.

Goals

To provide trouble-free, customer-focused, reliable, and affordable web hosting services. WE simply want to continue to operate a profitable web hosting company that makes customers happy. Since the beginning, we have backed our rock solid hosting solutions and top-notch infrastructure with the best customer service and technical support. A common feeling about the technology field is it's all about machines, yes, It does take machines but, Host Pair also knows it takes good people to run a well-oiled machine. Yes, a successful business needs to be committed to client solutions, innovation, creativity, and a warm, caring attitude to all of our customers' business needs. We don't just provide 24x7 support. We really do listen and care.

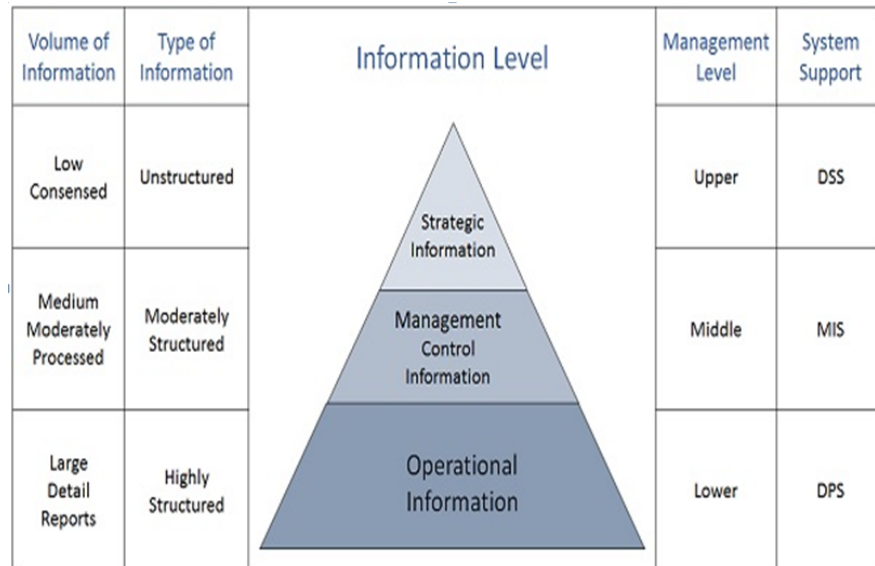


Figure 1.2: Categories of information related to managerial levels and the decision managers make.

1.6 Conclusion

we define the process of system analysis and design, outline the benefits of this process and list seven tools and techniques that may aid a organization in implementing its next system analysis and design process. The analyst plays many roles, sometimes balancing several at the same time. The three primary roles of the systems analyst are: consultant, supporting expert, and agent of change. The analyst is the key member of the Management Information System (MIS) and Decision Support System (DSS).

Chapter 2

The System Development Life Cycle

2.1 Introduction

The system development life cycle is a conceptual model used for project management that describes the stages involved in an information system development project, from an initial feasibility study through maintenance of the completed application. To understand system development, we need to recognize that a candidate system has a life cycle. The stages are shown below:

1. Recognition of need / initial investigation
2. Feasibility Study
3. Analysis
4. Design
5. Implementation
6. Post-implementation and maintenance

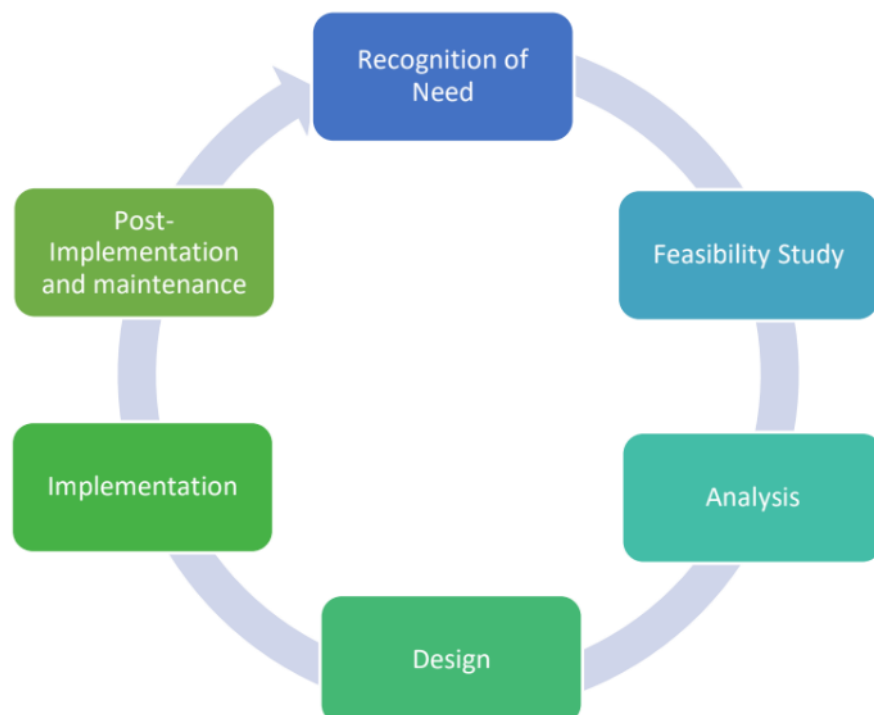


Figure 2.1: System development life cycle

2.2 Recognition of Need

One must know what the problems are before it can be solved. The basis for a candidate system is recognition of a need for improving an information system or a procedure. For example, a supervisor wants to investigate the system flow in purchasing. When we have completed our visit at netacode, we discuss the recognition needs of their clients and how they collect and process the requirements to complete their project successfully. They told us they have arranged meetings with their clients many times to understand and collect the requirements. They provide them forms and other documents to understand what is the actual need of their clients. If the problem is serious enough, management may want to have an analyst look at it. Such assignment implies a commitment. At this stage only a rough estimation of the development cost of the project may be reached. If the problem is serious enough, management may want to have an analyst look at it. Such assignment implies a commitment. At this stage only a rough estimation of the development cost of the project may be reached.

2.3 Feasibility Study

Depending on the initial investigation the survey expanded to a more detailed feasibility study. It is the test of a system proposal according to its workability. It focuses on three major questions:

1. What are the users demonstrable needs and how does a candidate system meet them?
2. What resources are available for a given candidate system? Is the problem worth solving?
3. What are likely impacts of the candidate system on the organization? How does it fit within the organization MIS plan?

Each of these questions must be answered carefully. They revolved around the investigation and evaluation of the problem, identification and description of the candidate system, specification of performance and the cost of each system and final selection of the best system.

The proposal summarizes what is known and what is going to be done. It consists of the following:

1. **Statement of the problem :** A carefully worded statement of the problem led to analysis.
2. **Summary of the findings and recommendations :** A list of the major findings and recommendations of the study. It is the idea for the user who requires quick access to the results of the analysis of the system under study. Conclusions are started followed by a list of the recommendations and a justification for them.
3. **Details of the findings :** an outline of the methods and procedures undertaken by the existing system, followed by coverage of the objectives and procedures of the candidate system. Included are also discussions of output reports, file structures, and cost and benefits of the candidate system.
4. **Recommendation and conclusions :** Specific recommendations regarding the candidate system, including personnel assignments, costs, project schedules and target dates.

2.4 Analysis

It is the detailed study of the various operations performed by netacode and their relationships within and outside of the system. A key question is : what must be done to solve the problem?

When we visited the organization we discussed the analysis system. They first analyse if they are able to complete it or not and then they discuss further processes that are steps they should take to make the project successful. Training, experience and common sense are required for collection of the information needed to do the analysis.

Once the analysis is completed, the analyst has a firm understanding what is to be done. The next step is to decide how the problem must be solved. Thus in system design, we move from the logical to physical aspects of the life cycle of a project.

2.5 Design

The most creative and challenging phase of a system life cycle of a project is system design. The term design describes a final system and the process by which it is developed. It refers to the technical specifications that will be applied in implementing the project. The question is here: How should the problem be solved?

The first step is to determine how the output is to be produced and in what form. Samples of the output are also presented. Second, input data and master files are designed to meet the requirements of the proposed output. Finally details related to justification of the project and an estimate of the impact of the candidate system on the user and the organization are documented and evaluated by management as a step toward implementation.

In netacode they first create a virtual design of the project by adobe illustrator or figma. then they present it to their clients to justify if it has been according to their requirements or not.

In some firms, separate groups of programmers do the programming, whereas other firms employ analyst programmers who do analysis.

2.6 Implementation

The implementation sector is less creative than system design. It is primarily concerned with user training, site preparation and file conversion. Depending on the nature of the system, extensive user training may be required. Conversion usually takes place at about the same time the user is being trained or later.

In netacode they told us they used react js as frontend development and node js for backend development. They also use nuxt js and next js for development. They used php but now they have shifted to javascript.

Once the program becomes available, test data is read into the computer and processed against the file(s) provided for testing. If successful, the program(s) is then run with live data. Otherwise a diagnostic procedure is used to locate and correct errors in the program. In most conversions a parallel run is conducted where the new system runs simultaneously with the old system.

2.7 Post termination and Maintenance

After the installation phase is completed and the user stuff is adjusted to the changes created by the candidate system, evaluation and maintenance begin. Like any system, there is an aging process that requires periodic maintenance of hardware and software. If the new information is inconsistent with the design specifications, the changes have to be made. The importance of maintenance is to

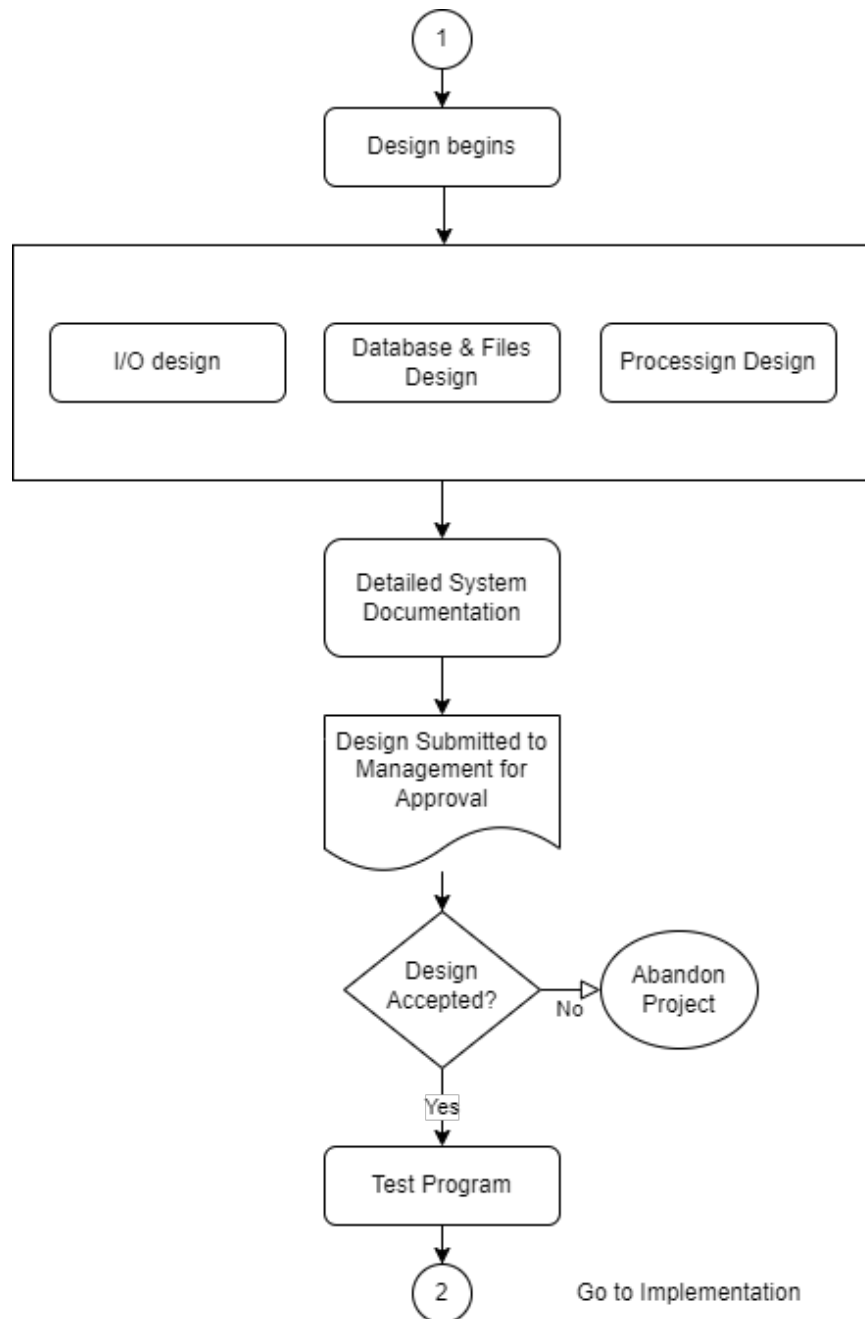


Figure 2.2: design of a system

continue to bring the new system to standards.

The policy of Netacode is to serve their clients with the project they have created according to the requirements. but they don't share the source code of any project and if their updates are available, they do it take charges. This is their strategy of post implementation and maintenance of any project.

2.8 Conclusion

In this chapter, discuss about Netacode (a system) life cycle and how it handle projects problem and it's solving methods.

Chapter 3

The Role of the System Analyst

3.1 Introduction

Systems analysts analyse how well software, hardware and the wider IT system fit the business needs of their employer or of a client. They write requirements for new systems and may also help implement them and monitor their effectiveness. Typical responsibilities of the job include: examining current systems.

System Analysis A person who conducts a methodical study and evaluation of an activity such as a business to identify its desired objective in order to determine procedures by which these objectives can be gained.

3.2 System Analyst

The systems analyst plays a key role in information systems development projects. The systems analyst works closely with all project team members so that the team develops the right system in an effective way. Systems analysts must understand how to apply technology to solve business problems. In addition, systems analysts may serve as change agents who identify the organizational improvements needed, design systems to implement those changes, and train and motivate others to use the systems.

Netacode interpersonal skills relevant to systems work include the following:

Communication: having the ability to articulate and speak the language of the user, a "flare" for mediation, and a knack for working with virtually all managerial levels in the organization.

Understanding identifying problems and assessing their ramifications, having a grasp of company goals and objectives, and showing sensitivity to the impact of the system on people at work.

3.2.1 Technical skills include

Creativity helping users model ideas into concrete plans and developing candidate systems to match user requirements.

Problem solving reducing problems to their elemental levels for analysis, developing alternative solutions to a given problem, and delineating the pros and cons of candidate systems

Project management scheduling, performing well under time constraints, coordinating team efforts, and managing costs and expenditure **

Netacode Interpersonal and Technical skill necessary in system Development :

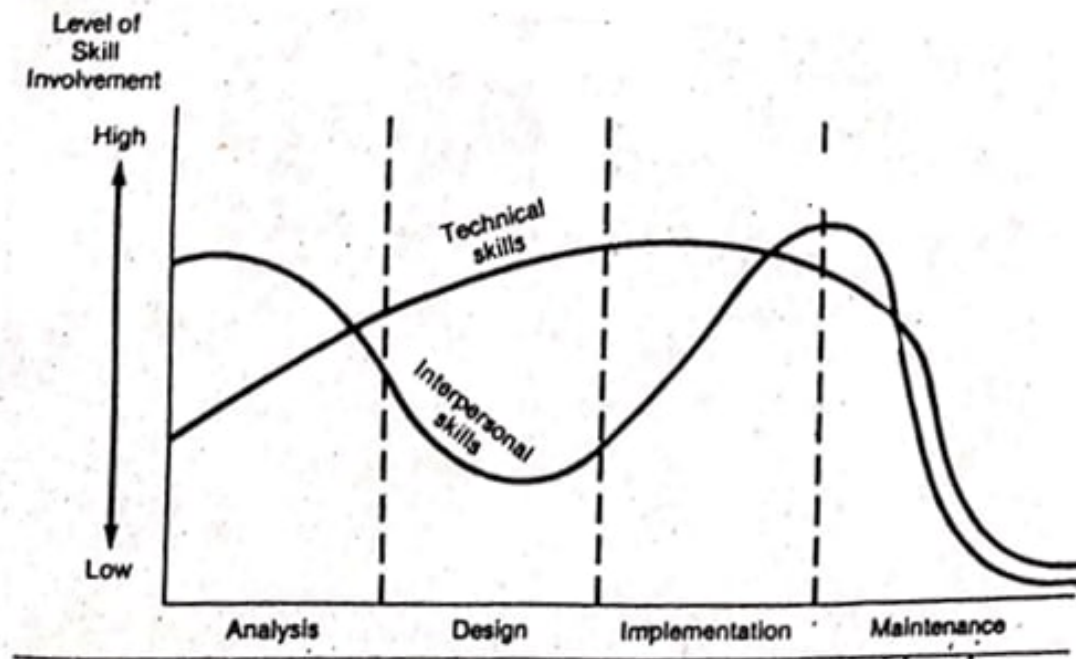


Figure 3.1: Interpersonal and Technical Skills

3.3 The attributes are

Authority-the confidence to "tell" people what to do. Much of this quality shows in project management and team work to meet deadlines. Communication skills-ability to articulate and focus on a problem area for logical solution.

Creativity-trying one's own ideas, developing candidate systems using unique tools or methods.

Responsibility-making decisions on one's own and accepting the consequences of these decisions.

Varied skills-doing different projects and handling change.

3.4 Conclusion

A system analyst role to develop a project successfully, achieve the objectives. A system analyst needs technical and interpersonal skill communication and interface with the user. Technical skills include creativity, problem solving, and managing the overall project.

Chapter 4

Systems Planning and the Initial Investigation

4.1 Bases for planning in system analysis

It is a systematic approach, which uses graphical tools that analyze and refine the objectives of an existing system and develop a new system specification which can be easily understandable by user. It has following attributes: It is graphic which specifies the presentation of application.

4.2 Strategic MIS Planning

Planning for information system development must be done within the framework of the Netacode overall MIS plan. The time horizon dimension specifies whether it is short, which is tantamount to the MIS yearly plan medium term, or long range.

The first task in strategic planning is to set the MIS objectives and the results expected.

The next step is to devise short-range plans that spell out the day-to-day activities of the system. They are programmed plans requiring a year's commitment. For example, Netacode is operating expense budget, the human resource budget of each computer application, and timetables for implementing a new system are all short-range plans designed to implement the organization's master plan by computerizing the labor-intensive areas of the business.

4.3 Strategies for Determining Information Requirements

There are three key strategies or general approaches for eliciting information regarding the user's requirements:

1. asking,
2. Getting information from the existing information system, and
3. Prototyping

Asking

This strategy obtains information from users by simply asking them about the requirements. It assumes a stable system where users are well informed and can overcome biases in defining their problem. There are three key asking methods:

1. Questions may be open-ended or closed. An open-ended question allows the respondent to formulate a response. For example, We ask some question about project development model and user handling process etc to Netacode.

2. Brainstorming is a technique used for generating new ideas and obtaining general information requirements. for example, We ask Netacode how they solve problem to build a project.
3. Group consensus asks participants for their expectations regarding specific variables a Delphi inquiry. for example, Netacode worker fills out a questionnaire The results are summarized and given to worker along with a follow up questionnaire. Worker are invited to change their responses. The results are again summarized and feedback to the Netacode worker. This debate by questionnaire continues until participants responses have converged enough.



Figure 4.1: Netacode jobholders and ours picture moment of getting information.

Getting information from the existing informaton system

Netacode have 4 room and 20 worker .In this branch 18 is developer and programer.1 person is branch CEO,1 person is software architect.

4.4 Conclusion

In this chapter, discuss about Netacode (a system) MIS planing and how we getting information from Netacode.

Chapter 5

Information Gathering

5.1 Introduction

Information is stimuli that has meaning in some context for its receiver. When information is entered into and stored in a computer, it is generally referred to as data. After processing – such as formatting and printing – output data can again be perceived as information. When information is compiled or used to better understand something or to do something, it becomes knowledge.

5.2 How Netacode collects information from clients

	A	B	C	D	E	F
1	Screen Name	Estimated Hour				
2	Homescreen	12-15				
3	Web Hosting	8-10				
4	Reseller Hosting	8-10				
5	Windows VPS	7-8				
6	Dedicated Server	6-7				
7	Partnership	4-5				
8	About Us	3-4				
9	Blog	2-3				
10	Blog Details	5-6			Not Necessary Right Now	
11	Our Datacenter	1				
12	Contact us	7-8				
13	Store	4-5				
14	News	10-12				
15	Knowledgebase	1				
16	Support Center	7-8				
17	Terms of Service	4-5				
18	Privacy Policy	3-4				
19	Register	1				
20	Sign In	7-8				
21	Forgot Password	4-5				
22	Checkout	10-12				
23	Payment	1				
24	Dashboard	7-8				
25	Total	110-133				
26						
27						
28	HTML CSS Frontend	Estimate can be possible after design completion				
29						

Figure 5.1: Information Collection

Netacode uses various data collection tools to collect necessary information from clients. Then, they make project timeline according to the client's requirements.

5.3 Information about the firm

The following Organization Chart for Netacode is displayed below.

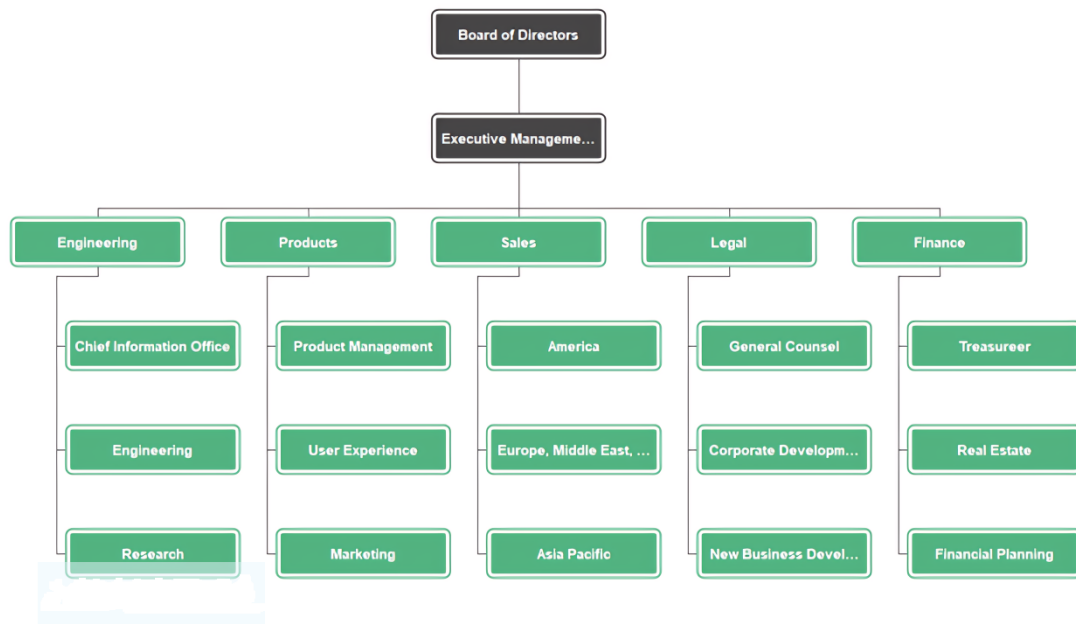


Figure 5.2: Organization Chart of Netacode

5.4 Information Gathering Method – Questionnaires

Since information must be acquired accurately, methodically, under the right conditions, and with minimum interruption to user personnel there is some tools which have been used to gather information. Though there are various kinds of information gathering tools we use:

1. Review of literature, procedures and forms.
2. On-site observation
3. Interviews
4. Questionnaires

In order to learn more about Netacode, we used a questionnaire form.

1. What are the objectives/goals of your company?

Ans: NetaCode's mission is to cater top notch, innovative, cost-effective solutions in a most professional manner to surpass client expectations and achieve competitive advantage for the clients. NetaCode's vision is to become a leading technology company to help others to use technology so that they can polish up productivity, resolve problems & increase efficiency, thus becoming an active part of their success.

2. Investment for a project?

Ans: \$5000 Yearly.

3. What Software Development model do your company use?

Ans: Agile Development Model.

4. Duration of longest project for your company.

Ans: 2 Years.

5. Which country clients your company mostly gets?

Ans: USA, UK, Turkey, Singapore

6. How do your company measure the progress of a project?

Ans: Netacode has its own Project Management tool. It uses the tool to manage project and progress of a project.

7. What are the development services do your company provide?

Ans:

- Web Solutions
- Android Application Development
- IOS Application Development
- ERP Solutions
- Cloud Networking

8. What type of payment system do your company use?

Ans: Bank

9. What technologies do your company use?

Ans:

Frontend development:

- React
- Angular
- Backbone.js
- AJAX
- jQuery
- Html
- Js
- CSS
- Meteor
- Bootstrap

Backend development:

- Symphony
- Pyramid
- Django
- Laravel
- Drupal
- NodeJS
- Microsoft.NET
- Express.js
- Spring

Database:

- MySQL
- Oracle
- Microsoft SQL Server
- PostgreSQL
- Sybase
- Redis

10. What type of method/tools do your company use for project scheduling and management?

Ans: Netacode has its own Project Management tool. It uses the tool to manage project as well as track progress of a project.

11. Specifications of your mostly used Hardwares for development.

Ans:

Model: iMac 24''(2021)

Display: 4.5K Retina display

CPU: Apple M1 chip 8-core CPU and up to 8- core GPU

Memory: 16GB unified memory

Storage: 512GB SSD

Power: 143W

OS: macOS

12. Do your company have any intern positions?

Ans: Not for now. But Netacode is willing to take interns in near future.

13. Do your company conduct tours?

Ans: Yes.

14. Please mention some clients/partners of your company.

Ans:

- Gazi Group
- Global Group Technology
- Stella Market
- Ubuntumarkets
- Meta FX solutions.

5.5 Conclusion

This chapter taught us about numerous techniques for acquiring information as well as the Netacode company's organizational structure, which we visited. We also learned about the methods used by Netacode to gather client information.

Chapter 6

The Tools of Structured Analysis

6.1 Structured Analysis

Structured Analysis is a development method that allows the analyst to understand the system and its activities in a logical way. It has following attributes

- It is graphic which specifies the presentation of application.
- It divides the processes so that it gives a clear picture of system flow.
- It is logical rather than physical i.e., the elements of system do not depend on vendor or hardware.
- It is an approach that works from high-level overviews to lower-level details.

6.2 Structured Analysis Tools

During Structured Analysis, various tools and techniques are used for system development. They are

- Data Flow Diagrams
- Data Dictionary
- Decision Trees
- Decision Tables
- Structured English
- Pseudocode

6.3 Information Gathering Tools

It is a technique developed by Larry Constantine to express the requirements of system in a graphical form.

- It shows the flow of data between various functions of system and specifies how the current system is implemented.
- It is an initial stage of design phase that functionally divides the requirement specifications down to the lowest level of detail.

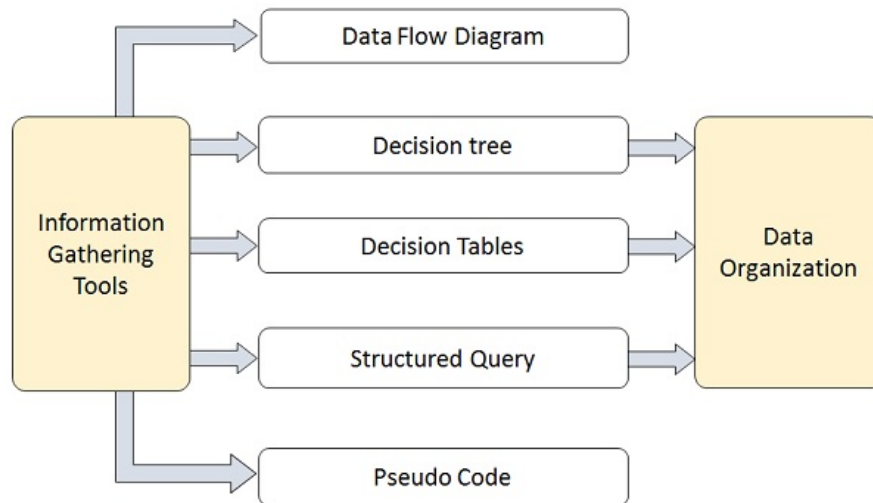

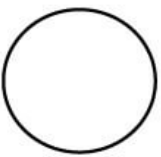
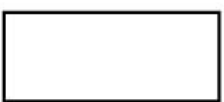
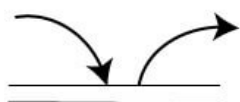


Figure 6.1: Information Gathering Tools

- Its graphical nature makes it a good communication tool between user and analyst or analyst and system designer.
- It gives an overview of what data a system processes, what transformations are performed, what data are stored, what results are produced and where they flow.

Standard symbols for DFDs are derived from the electric circuit diagram analysis and are shown in fig6.2:

Symbol	Name	Function
	Data flow	Used to Connect Processes to each , other , to sources or Sinks; te arrow head indicates direction of data flow.
	Process	Performs Some transformation of Input data to yield output data.
	Source of Sink (External Entity)	A Source of System inputs or Sink of System outputs.
	Data Store	A repository of data; the arrow heads indicate net inputs and net outputs to store.

Symbols for Data Flow Diagrams

Figure 6.2: Data Flow Diagram Symbols

Here is a Data Flow Diagram that Netacode provided, illustrates the data flow between their website, web server and database.

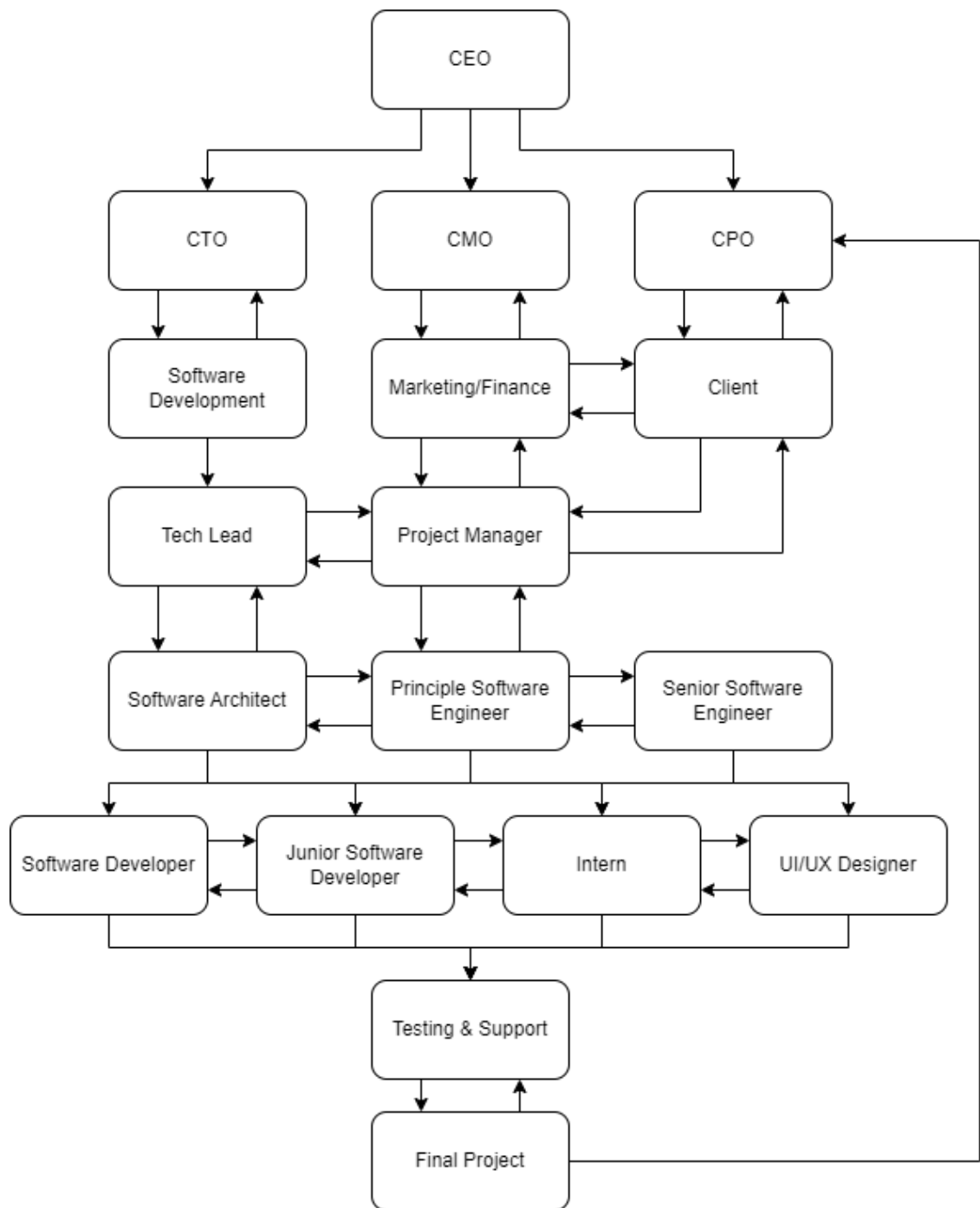


Figure 6.3: Data Flow Diagram of Netacode

Here Netacode billing system flow diagram

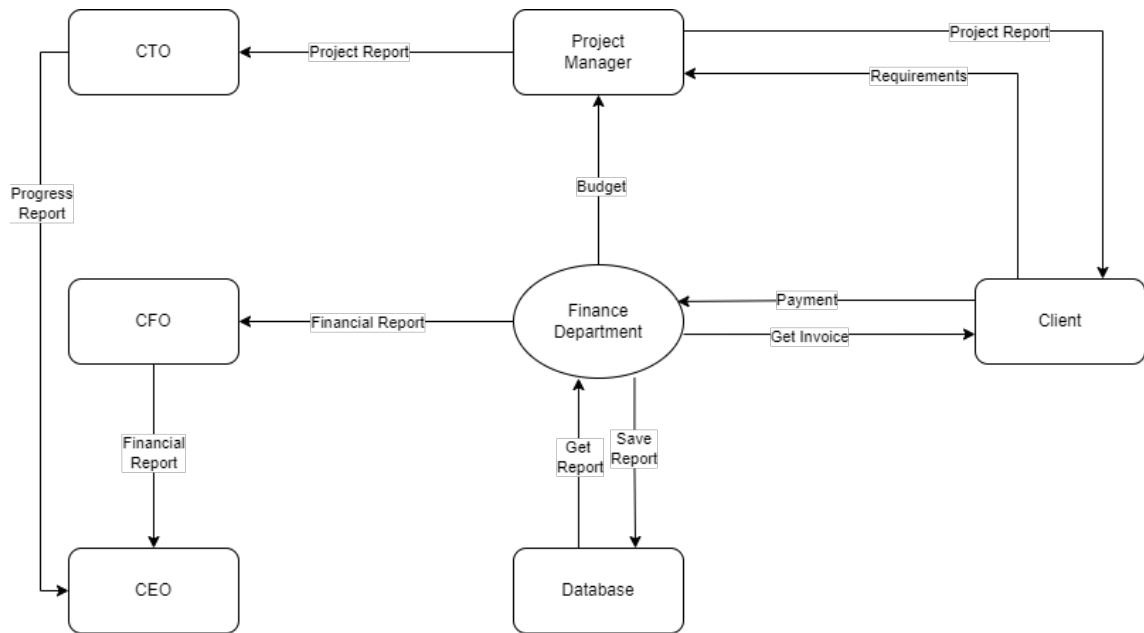


Figure 6.4: Netacode billing system

6.4 Conclusion

This chapter taught us about how make a system data flow diagram. Netacode data flow diagram and billing system also given in the chapter.

Chapter 7

Feasibility Study

7.1 Introduction

A feasibility study in software engineering is a rigorous evaluation of the profitability and viability of a software development initiative. For a company with 10-year expertise, ScienceSoft helps businesses understand whether a new software project is worth their time and money.

Feasibility Study Process :

1. Information assessment
2. Information collection
3. Report writing
4. General information

The next step is to determine exactly candidate system needed.

7.2 Need of Feasibility Study in The Company

Feasibility study is so important stage of Software Project Management Process as after completion of feasibility study it gives a conclusion of whether to go ahead with proposed project as it is practically feasible or to stop proposed project here as it is not right/feasible to develop or to think/analyze about proposed project again

7.3 System Performance

Performance is an indicator of how well a software system or component meets its requirements for timeliness. Timeliness is measured in terms of response time or throughput. The response time is the time required to respond to a request. It may be the time required for a single transaction, or the end-to-end time for a user task. For example, Netacode determine performance client response to want make project by them and client feedback about existing project.

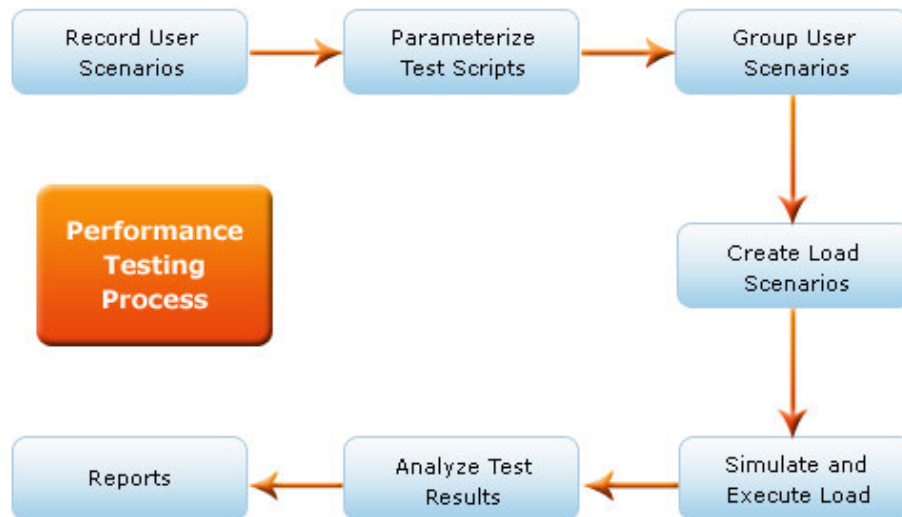


Figure 7.1: System performance diadram

7.4 Identification of Specific System Objective

In netacode a build a project and not sell the project ,they rent every project for a certain time(1 year).They must follow the below technique to build a project successfully.

1. Live Chat and Ticket Review system
2. Asking them over the phone.
3. Listening to them carefully.
4. Web Reviews
5. Comment Sections
6. Keyword Research

7.5 Feasibility Consideration

7.5.1 Economic Feasibility

NetaCode give customer a 30-day money back guarantee, incase clients are not happy with our service.their hosting packages are scalable- clients can upgrade/downgrade as per clint needs. No hidden prices.

7.5.2 Technical Feasibility

Since they rent the software, they handle all the technical issues themselves, they keep the software on their own multiple servers.

7.5.3 Behaviour Feasibility

Computer and device are not know about what they do.what we want we can do everything with clint.So every project must know the behaviour with clint.

For successfully run a project NetaCode flow 5 steps with in 8 step for Feasibility Analysis.

- form a project team and appoint a project leader
- prepare system flowchart.
- select a template which already build by them
- prepare and report final project directive to management
- select best candidate system

Dedicated Servers

Sort a list of servers by clicking on the column header






Image	Name	Memory	CPU Speed	Storage	Traffic	
	Intel Xeon E3 1245 V5	16 GB DDR4 ECC	3.5GHz/3.9GHz	2x500 GB SSD	10TB*	Configure
	Intel Xeon E2136 V6	32 GB DDR4 ECC	3.3 x 4.5 GHz	2x500 GB SSD	20TB*	Configure
	Intel Xeon E2288G	64 GB DDR4 ECC	3.7 x5 GHz	2x500 GB SSD	100TB*	Configure
	AMD EPYC 7371P	128 GB DDR4 ECC	2.4 x 2.9 GHz	2x500 GB SSD	200TB*	Configure
	AMD EPYC 7371P	128 GB DDR4 ECC	2.4 x 2.9 GHz	2x500 GB SSD	200TB*	Configure

Figure 7.2: selecting best candidate system

7.6 Conclusion

In this chapter we learn about feasibility study. A feasibility study is conducted to select the best system that meets performance requirement .Three consideration are :economic,technical and behavioral .Economic analysis as cost/benefit .technical evaluate existing cost/benefit,and they follow the feasibility steps to build a project successfully.

Chapter 8

Cost/Benefit Analysis

8.1 Introduction

A cost-benefit analysis is the process of comparing the projected or estimated costs and benefits (or opportunities) associated with a project decision to determine whether it makes sense from a business perspective.

8.2 Data analysis

Data analysis is a prerequisite to cost/benefit analysis. For Netacode, a single statement that succinctly defines client product/service

- Fast , Secure and Reliable

8.3 cost

Cost determine the benefit and saving that are expected from the system and compare them with the expected costs.

The cost for a project mainly depend on time, server, hardware ,equipment and personnel cost.

Hardware/software cost:

It include the cost of purchasing or leasing of computers and its peripherals. Software cost involves required software cost.

CloudLinux LIVE Limit	Eco	Standard	Advanced
RAM	700 MB	1 GB	2 GB
Disk I/O	20 Mbps I/O	20 Mbps I/O	50 Mbps I/O
Concurrent Connections	20 EP	20 EP	50 EP
Max. Number of Processes	100 nPROC	100 nPROC	100 nPROC
CPU Cores	1 CPU Core	1 CPU Core	2 CPU Core

Figure 8.1: using hardware list

personnel cost:

It is the money send on the people involve in the development the project .These expenditures include salaries,other benifit such as health ,conveyance allowance etc.In netacode each personnel cost is 50000 per month and forevery project extra working per hours they pay extra 5000.

Time cost: If a project need to made by personnel more time ,give them more money.

	A	B	C	D	E	F
1	Screen Name	Estimated Hour				
2	Homescreen	12-15				
3	Web Hosting	8-10				
4	Reseller Hosting					
5	Windows VPS	8-10				
6	Dedicated Server	7-8				
7	Partnership	7-8				
8	About Us	8-10				
9	Blog	6-7				
10	Blog Details	4-5			Not Necessary Righ Now	
11	Our Datacenter	3-4				
12	Contact us	2-3				
13	Store	5-6				
14	News	5-6				
15	Knowledgebase	3-4				
16	Support Center	4-5				
17	Terms of Service					
18	Privacy Policy	1-2				
19	Register	3-4				
20	Sign In	1				
21	Forgot Password					
22	Checkout	7-8				
23	Payment	4-5				
24	Dashboard	10-12				
25	Total	110-133				
26						
27						
28	HTML CSS Frontend	Estimate can be possible after design completion				
29						
30						

Figure 8.2: Time requirement for a website ECNHOST made by NetaCode

8.3.1 Cost analysis for a existing project

Successfully run a project by Netacode cost analysis

Total Investment by clint is 3,550,000tk

Ten member work in this project for 15 days.

personnel cost $= (10 \times 50,000) + (5000 \times 3 \times 10) = 6,50,000\text{tk}$

hardware/software cost = 5,00000tk

equipment cost = 20,00000tk

Others = 4,00000

total $= 650000 + 500000 + 2000000 + 400000$
 $= 3550000\text{tk}$

8.4 Benefit

The biggest advantage of Netacode audience is that -

- clint can start with their services without any technical knowledge , as we will provide full support for them.
- Very Economical (We can beat any of our competitors) with ensuring quality service
- Multi-Carrier Route Optimized Network
- Proactive monitoring and resolution
- Exceptional performance and reliability
- Best customer retention rate
- 24 hours Live Support by responsible and reliable Staff.

8.4.1 Benefit analysis for a existing project

After running the project average every month in first One year earn by clint 150,000.
so, No. of month need for net benifit

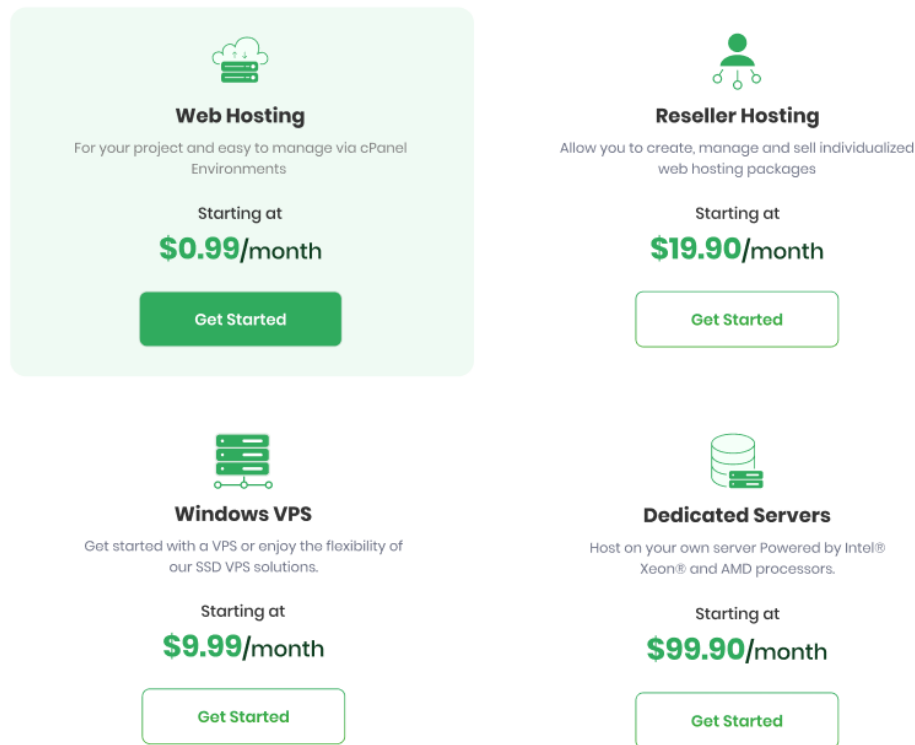
$$n = 3,550,000 / 200,000 = 18 \text{ month} = 1.8 \text{ year}$$

and every month server cost pay by clint is 10,000tk

month	Need cost=C- benifit	C=Server cost(10,000)+need cost	benefit	Cummulative benefit
0	3550000	3560000	200000	200000
1	3360000	3370000	200000	400000
2	3170000	3180000	200000	600000
3	2980000	2990000	200000	800000
4	2790000	2800000	200000	10,00000
5	2600000	2610000	200000	12,00000
6	2410000	2420000	200000	14,00000
7	2220000	2230000	200000	16,00000
8	2030000	2040000	200000	18,00000
9	1830000	1840000	200000	20,00000
10	1640000	1650000	200000	22,00000
11	1250000	1260000	200000	24,00000
12	1060000	1070000	200000	26,00000
13	870000	880000	200000	28,00000
14	680000	690000	200000	30,00000
15	490000	500000	200000	32,00000
16	300000	310000	200000	34,00000
17	110000	120000	200000	36,00000
18	-80000	-70000	200000	38,00000

So after 18 month running this project the clint get 20,0000tk profit every month

Our Provide Best Quality Services



The image displays a grid of four service cards for NetaCode. Each card features an icon, a service title, a brief description, a starting price, and a 'Get Started' button. The 'Web Hosting' card is highlighted with a light green background and a solid green button, while the others have white backgrounds with green borders and buttons.

Service	Description	Starting at
Web Hosting	For your project and easy to manage via cPanel Environments	\$0.99/month
Reseller Hosting	Allow you to create, manage and sell individualized web hosting packages	\$19.90/month
Windows VPS	Get started with a VPS or enjoy the flexibility of our SSD VPS solutions.	\$9.99/month
Dedicated Servers	Host on your own server Powered by Intel® Xeon® and AMD processors.	\$99.90/month

Figure 8.3: NetaCode services

8.5 Conclusion

Cost benefit and data analysis is most Important think for every system.we can find the existing system is benifited or not after analysis cost and benefit analysis.Clint can decide the want run the system after seeing the cost analysis.

Chapter 9

The Process and Stages of System Design

9.1 Introduction

The discussion is so far to a pivotal point in the system development life cycle. User requirements have been identified. Information has been gathered to verify the problem and evaluate the existing system. A feasibility analysis has been conducted to review alternative solutions and provide cost/benefit justification. The culmination of the study is a proposal summarizing the finding and recommending a candidate system for the user.

The design phase is a translation from a user-oriented document to a document oriented to the programs or database personnel.

9.2 Logical and Physical Design

System design goes through two phases of development: logical and physical design. The design which shows the logical flow of a system and defines the boundaries of the system is known as **logical system design**. It describes the input,output,databases and procedures all in a format that meets the user requirements. The design Netacode covers the following:

1. Reviews the current physical system: its data flow , frequencies.
2. Prepares output specification:it determines the format content and frequency of reports.
3. Prepares input specification: format, content and most of the input functions
4. Specifies the implementation plan.
5. Review benefits , costs, target dates and system constraints.

Physical design relates to the actual input and output processes of the system. It focuses on how data is entered into a system,verified, processed and displayed as output. It produces the working system by defining the design specification that specifies exactly what the candidate system does. It consist of following steps for Netacode:

- Specifying the input/output media, designing the database, and specifying backup won server.
- Planning system implementation.
- Devising a test and implementation plan, and specifying any new hardware and software.
- Updating costs, benefits, conversion dates, and system constraints.

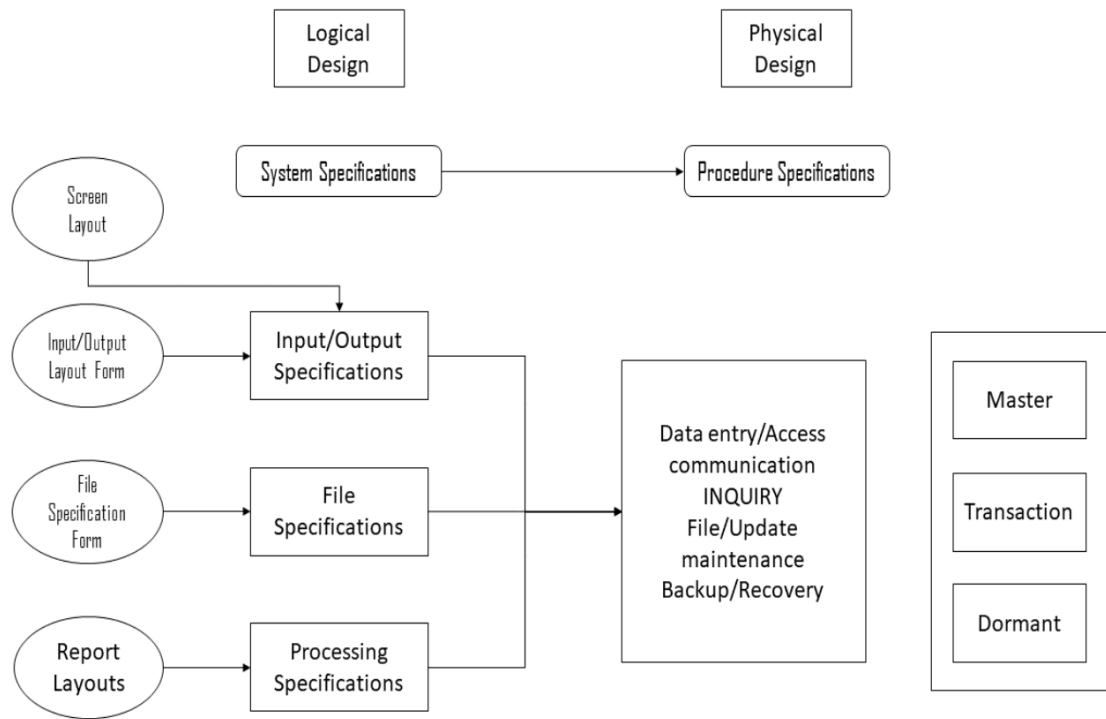


Figure 9.1: system goes through Logical and Physical design

9.3 Structured Design

Structured design is a data-flow-based methodology. In structured designing, the system specifications act as a basis for graphically representing the flow of data and sequence of processes involved in a software development with the help of DFDs. The figure 9.3 shows the HIPO diagram of Neta-code.

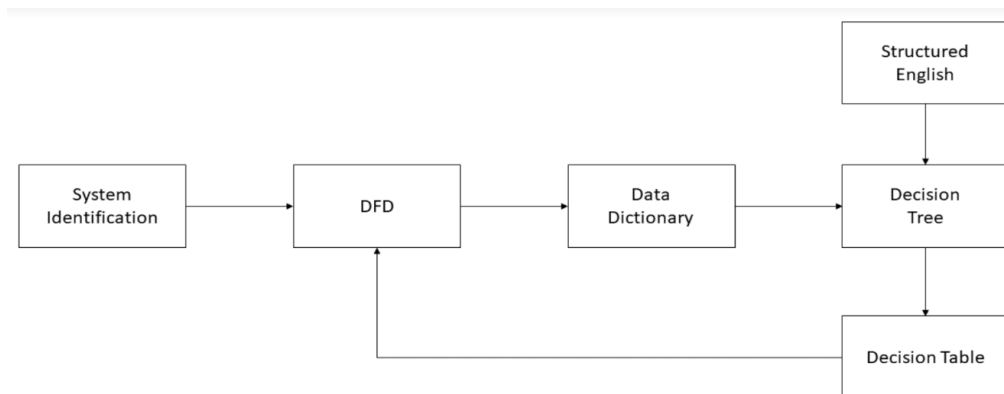


Figure 9.2: Structured Design Method

9.4 HIPO Diagram

HIPO is a forms-driven technique in that standard forms are used to document the information. It consists of a hierarchy chart and an associated set of input/process/output charts.

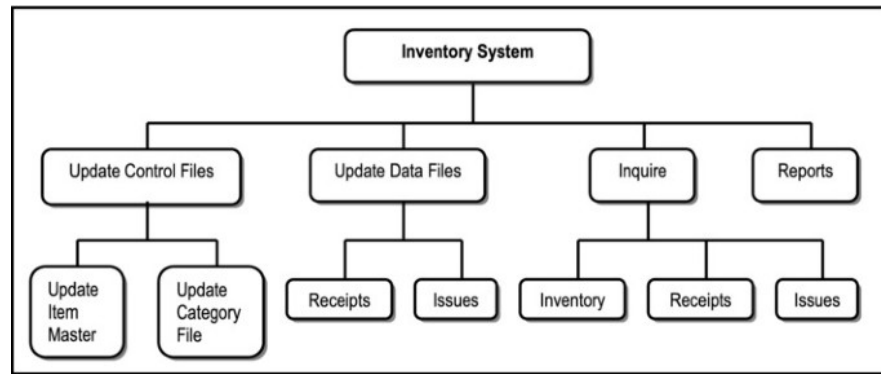


Figure 9.3: HIPO Diagram for a project by NetaCode

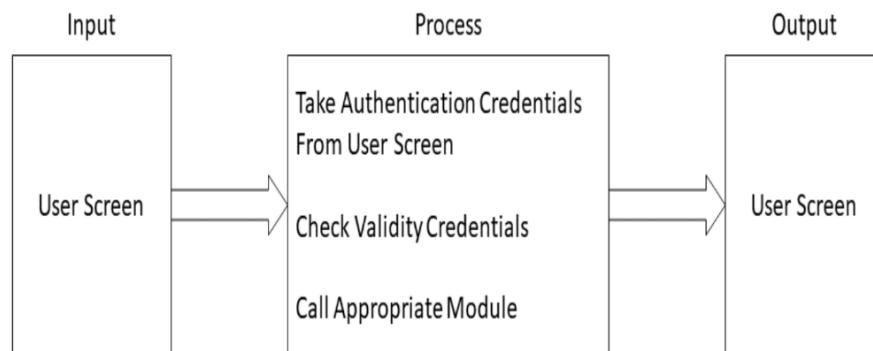


Figure 9.4: IPO Diagram of NetaCode Implemented project

9.5 IPO Diagram

An IPO (Input Process Output) Diagram is a very high level diagram used for system analysis that visually describes the business process with the description of each component in word. It shows a process key inputs and resulting output after a set of operations. The figure 9.4 show the IPO diagram of netacode.

9.6 Conclusion

System design is the phase that bridges the gap between problem domain and the existing system in a manageable way. This focuses on the solution domain, like how to implement. It is the phase where the SRS document is converted into a format that can be implemented and decides how the system will operate. In this phase the complex activity of system development is divided into several sub-activities. Which coordinate with each other to achieve the main objective of system development.

Chapter 10

Input/Output and Forms Design

10.1 Introduction

In an information system, input is the raw data that is processed to produce output. During the input design, the developers must consider the input devices such as PC, MICR, OMR, etc. The design of output is the most important task of any system.

10.2 Input Design

Netacode input forms and screens have following properties

- It should serve specific purpose effectively such as storing, recording, and retrieving the information.
- It ensures proper completion with accuracy.
- It should be easy to fill and straightforward.
- It should focus on user's attention, consistency, and simplicity.

10.3 Data Input Methods

Some of the popular data input methods are

- Batch input method (Offline data input method): Clint give some offline data to prepare a project to Netacode.
- Online data input method: sometime many online data need for develop a project.
- Computer readable forms
- Interactive data input

10.4 Output Design

Output design, developers identify the type of outputs needed, and consider the necessary output controls and prototype report layouts.

10.4.1 Objectives of Output Design

The objectives of output design of Netacode are

- To develop output design that serves the intended purpose and eliminates the production of unwanted output.
- To develop the output design that meets the end users requirements.
- To deliver the appropriate quantity of output.
- To form the output in appropriate format and direct it to the right person.

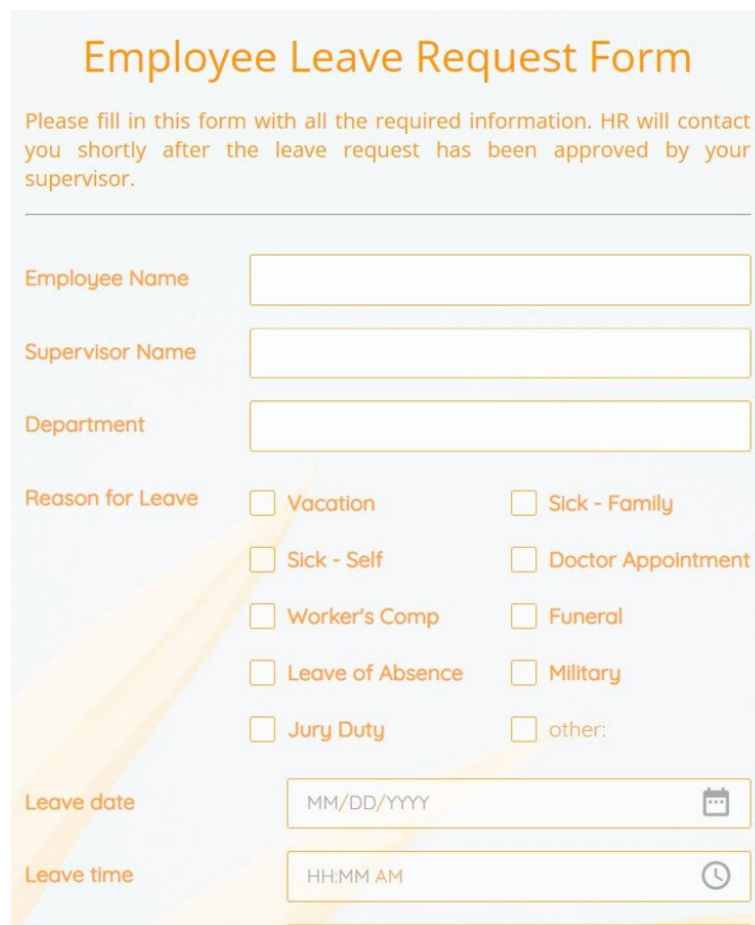
10.5 Forms Design

Both forms and reports are the product of input and output design and are business document consisting of specified data. The main difference is that forms provide fields for data input but reports are purely used for reading. For example, order forms, employment and credit application, etc.

10.6 Types of Forms

Flat Forms

- It is a single copy form prepared manually or by a machine and printed on a paper. For additional copies of the original, carbon papers are inserted between copies.



The image shows a digital form titled "Employee Leave Request Form" in orange text. Below the title is a light blue box containing the instruction: "Please fill in this form with all the required information. HR will contact you shortly after the leave request has been approved by your supervisor." The form fields are as follows: "Employee Name" (text input), "Supervisor Name" (text input), "Department" (text input), "Reason for Leave" (checkboxes for Vacation, Sick - Family, Sick - Self, Doctor Appointment, Worker's Comp, Funeral, Leave of Absence, Military, Jury Duty, and other:), "Leave date" (text input with MM/DD/YYYY format and a calendar icon), and "Leave time" (text input with HH:MM AM format and a clock icon).

Figure 10.1: Employee leave request form

- It is a simplest and inexpensive form to design, print, and reproduce, which uses less volume.

Unit Set/Snap out Forms

- These are papers with one-time carbons interleaved into unit sets for either handwritten or machine use.
- Carbons may be either blue or black, standard grade medium intensity. Generally, blue carbons are best for handwritten forms while black carbons are best for machine use.

10.7 Employment Form

Below here is a joining letter provided by NetaCode

Joining Letter

Date: _____

To,

(HR/Concerned Manager)
(Name of the Company)
(Address)

Subject: An Intimation of Joining on Duty

Respected Sir/Ma'am,

I am elated to inform you that I will be joining as _____ in your organisation on date _____. I accept the terms and conditions mentioned in the appointment letter no. _____ and dated _____. I assure you that I will utilise my professional experience and skills to the benefit of the organisation.

Thank you,

Yours Sincerely,

Signature
Contact Number

Figure 10.2: Joining letter of Netacode

10.8 Conclusion

With their consent, the information on the form above was gathered during the visit to Netacode Inc. and used in the report. The form is used by the organization to gather project requirements from clients. This form includes Client Contact Details, Project Time frame, Project Outline, Information on existing system, Website Architecture, Design Taste, Competition and Niche, Comment Section and a Sample Project output.