

KANTIPUR ENGINEERING COLLEGE

(Affiliated to Tribhuvan University)

Dhapakhel, Lalitpur



[Subject Code: CT755]

A MAJOR PROJECT FINAL REPORT ON PROJECT TITLE

Submitted by:

Member Name 1 [Roll/Symbol No.]

Member Name 2 [Roll/Symbol No.]

Member Name 3 [Roll/Symbol No.]

Member Name 4 [Roll/Symbol No.]

**A MAJOR PROJECT SUBMITTED IN PARTIAL
FULFILLMENT OF THE REQUIREMENT FOR THE DEGREE
OF BACHELOR IN COMPUTER ENGINEERING**

Submitted to:

Department of Computer and Electronics Engineering

May, 2017

PROJECT TITLE

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Member Name 1 [Roll/Symbol No.]

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Department of Computer and Electronics Engineering

Kantipur Engineering College

Dhapakhel, Lalitpur

Nepal

KANTIPUR ENGINEERING COLLEGE
DEPARTMENT OF COMPUTER AND ELECTRONICS ENGINEERING
APPROVAL LETTER

The undersigned certify that they have read and recommended to the Institute of Engineering for acceptance, a project report entitled "Project Title" submitted by

Member Name 1 [Roll/Symbol No.]

Member Name 2 [Roll/Symbol No.]

Member Name 3 [Roll/Symbol No.]

Member Name 4 [Roll/Symbol No.]

in partial fulfillment for the degree of Bachelor in Computer Engineering.

.....
Supervisor
Supervisor's Name
Supervisor's Designation
Second Line of Designation (if required)

.....
External Examiner
External's Name
External's Designation
Second Line of Designation (if required)

.....
Er. Rabindra Khati
Head of Department
Department of Computer and Electronics Engineering

Date: May 15, 2017

ABSTRACT

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Keywords— Keyword 1, Keyword 2...

ACKNOWLEDGMENT

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TABLE OF CONTENTS

Copyright	i
Approval Letter	ii
Abstract	iii
Acknowledgment	iv
1 Introduction	1
1.1 Background	1
1.1.1 Referring Section	3
2 LITERATURE REVIEW	5
3 METHODOLOGY	6
3.1 Working Mechanism	6
3.1.1 Block Diagram	6
3.1.2 Block diagram of blockchain	7
3.2 System Models	8
3.2.1 Use Case Diagram	8
3.2.2 Data Flow Diagrams (DFD)	9
3.2.3 Activity diagram	11
3.3 SDLC	13
3.4 Section for Sample Table	15
3.4.1 Referring Table	15
3.5 Complex Table from Excel	16
4 Equations	18
4.1 Basics of Equations	18
4.2 Referencing the Equation	20
5 Listing Examples	21
5.1 The Subsections	22
6 Example abbr and symbols	24
6.1 Abbr	24
6.2 Symbols	24
7 Citation Example	25
7.1 Citation and compiling bib file	25

References	25
Appendix	26

LIST OF FIGURES

3.1	Block Diagram of Voting System	6
3.2	Block Diagram of blockchain	7
3.3	Use Case Diagram of blockchain-based voting system	9
3.4	0-level data flow diagram	10
3.5	1-level data flow diagram	10
3.6	Activity diagram for Register	11
3.7	Activity diagram for voting	12
3.8	Software Development Life Cycle Diagram	13
3.9	Incremental Model from 1 to N no of steps	14

LIST OF TABLES

3.1	Table Example	15
3.2	Complex table converted from Excel using excel2latex	16

CHAPTER 1

INTRODUCTION

1.1 Background

Voting has always been an integral part of a democracy. Voting is the ultimate right that can be utilized in a Democracy. There have been witnessed so many voting methods in our history, from holding up hands in an assembly in the ancient Greek era to paper ballots and electronic voting machines.

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1.1.1 Referring Section

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CHAPTER 2

LITERATURE REVIEW

CHAPTER 3

METHODOLOGY

3.1 Working Mechanism

3.1.1 Block Diagram

A block diagram is a drawing illustration of a system whose parts are illustrated by blocks. These blocks are joined by lines to display the relationship between the blocks. Block diagrams are used to visualize the functionality of a system.

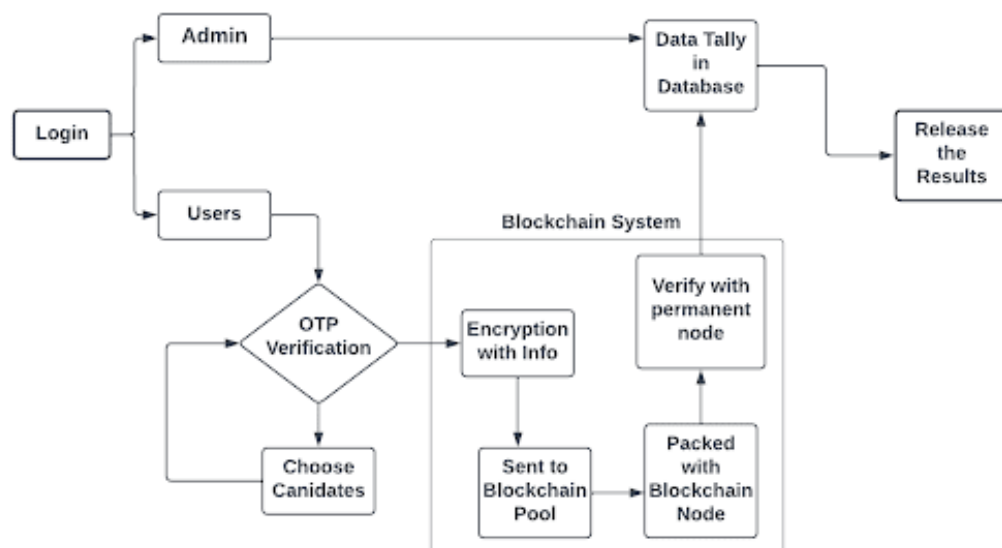


Figure 3.1: Block Diagram of Voting System

Login

Firstly, user provide voters verified college email address and password to login for both admin and users.

OTP Verification

The system send OTP code to the verified user email address and that code is enter by the user and verified themselves.

Choose Candidate

After users logged in to the system they enter into the select candidate page. There the user cast their vote to the respective candidate and again entering an updated OTP that he receives on his email address confirm the final process of voting. At third those information at the pool was packed into a Blockchain node which was created with the Keccak -256 Algorithm. At last node is finally verified with permanent node. With these four different steps the Blockchain system is carried out then proceeds to further steps.

Tally at Database

The results are then tally at Database where the individual votes were recorded for individual candidate. The admin can control over the database for security purpose and initial monitoring of results but admin can't modify it on database.

Release Result

Then at last the tally votes were shown in results which is done after all the process completion.

3.1.2 Block diagram of blockchain

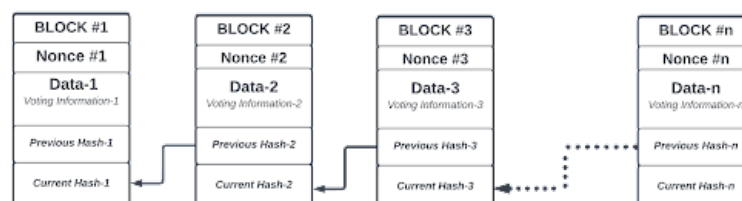


Figure 3.2: Block Diagram of blockchain

Nonce

Nonce is the value used to calculate a block hash that meets a certain requirement. (Eg:- Start with a certain number of Zeroes).

Voting Data

In this part of the block data is stored. Here the data about the voter count for candidate, whether the voter has already voted or not.

In this part of the block data is stored. Here data is divided to 2 parts one for the voter and one for the candidate. In the voter part the details about the voter are stored. It stores the data whether the voter has voted or not and which address the voter has voted for. In the candidate part it stores the name, address and total vote count of the candidate.

Previous Hash

It is the hash of the block before it. It is used to link to the previous block.

Current Hash

It is the hash (.i.e. Hash is a unique fixed sized output for an input generated through a one way function called hash function) of the current data.

3.2 System Models

3.2.1 Use Case Diagram

A use case diagram is a way to summarize the details of a system and the users within that system. It is generally shown as a graphic depiction of interactions among different elements in a system. Use Case Diagrams will specify the events in a system and how those events flow. However, Use Case Diagram does not describe how those events are implemented.

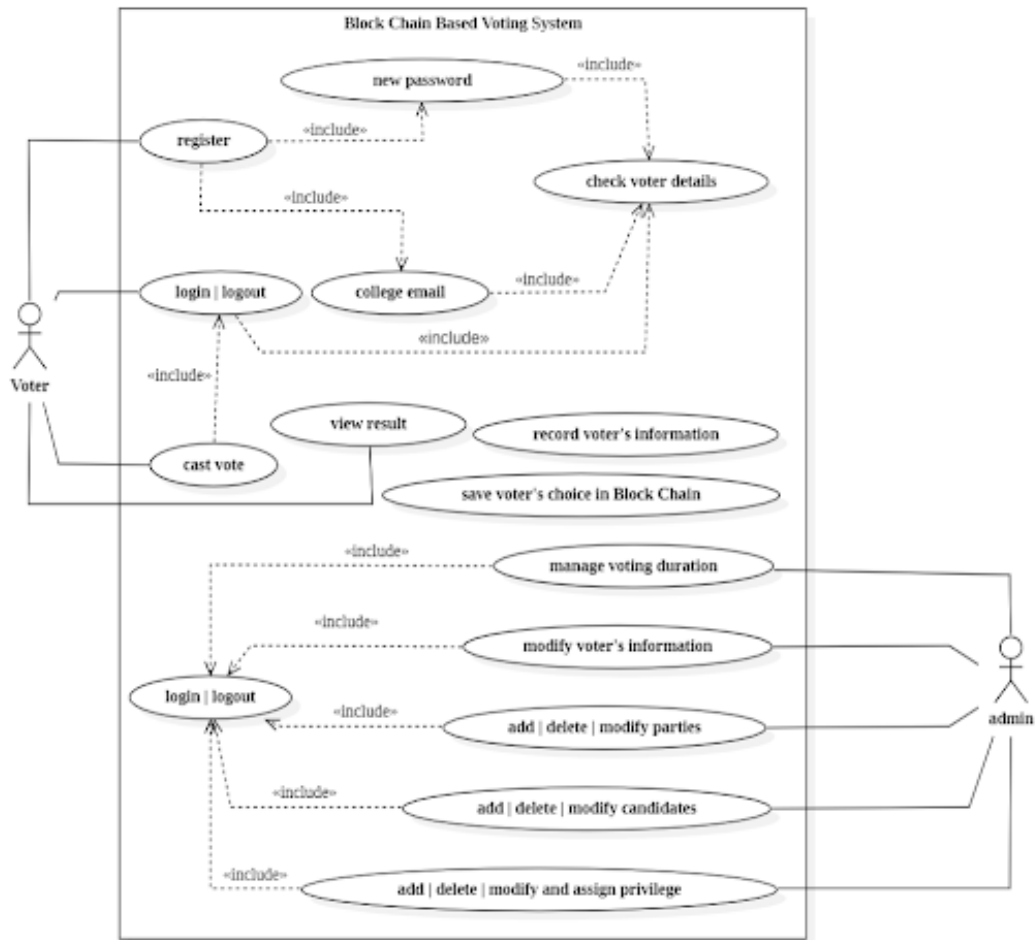


Figure 3.3: Use Case Diagram of blockchain-based voting system

3.2.2 Data Flow Diagrams (DFD)

In Software engineering, DFD(data flow diagram) can be drawn to represent the system of different levels of abstraction. Higher-level DFDs are partitioned into low levels- hacking more information and functional elements. Levels in DFD are numbered 0, 1, 2, or beyond. Here, we will see 2 levels in the data flow diagram: 0-level DFD and 1-level DFD.

0-level DFD

It is also known as a context diagram. It is designed to be an abstraction view, showing the system as a single process related to external entities. It represents the entire system

as a single bubble with input and output data indicated by incoming/outgoing arrows.

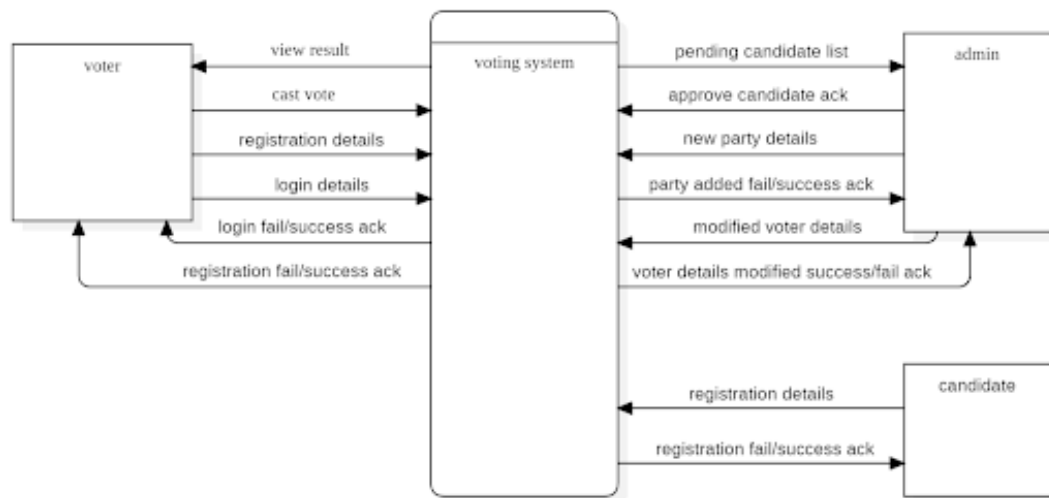


Figure 3.4: 0-level data flow diagram

1-level DFD

In 1-level DFD, the context diagram is decomposed into multiple bubbles/processes. In this level, this report highlight the system's main functions and break down the high-level process of 0-level DFD into subprocesses.

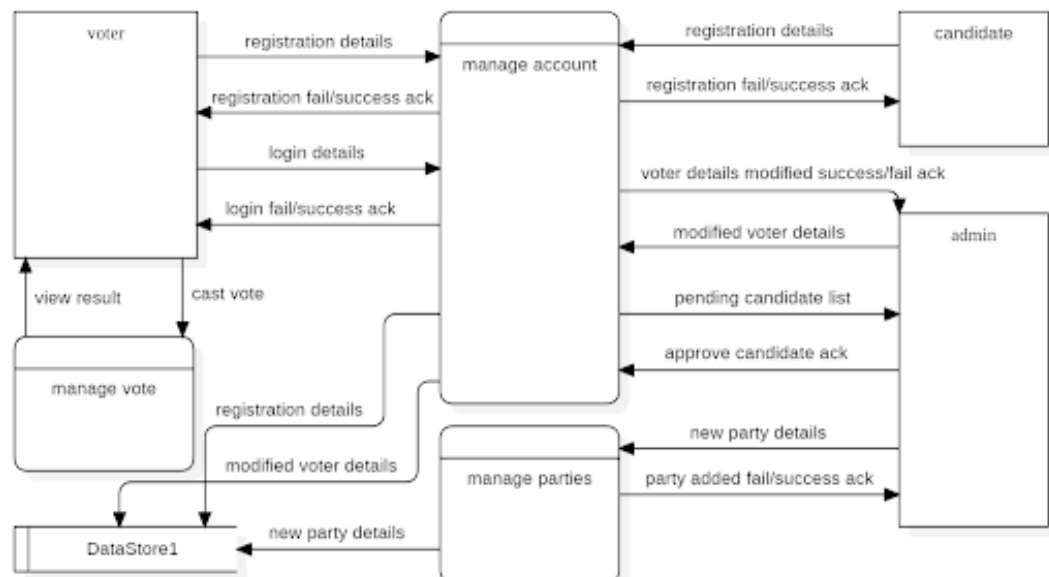


Figure 3.5: 1-level data flow diagram

3.2.3 Activity diagram

An activity diagram is a flowchart representing the flow from one activity to another. The activity can be described as an operation of the system.

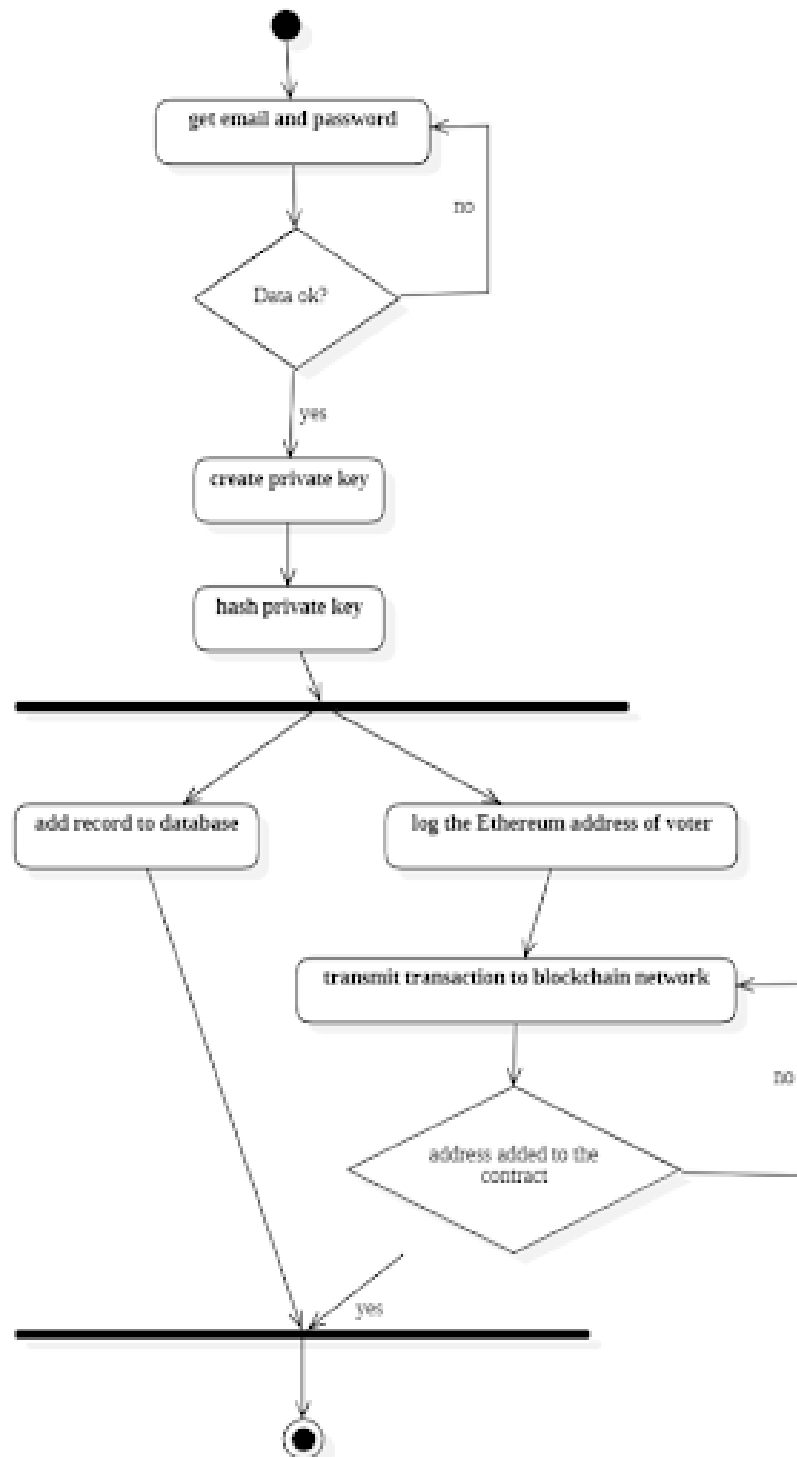


Figure 3.6: Activity diagram for Register

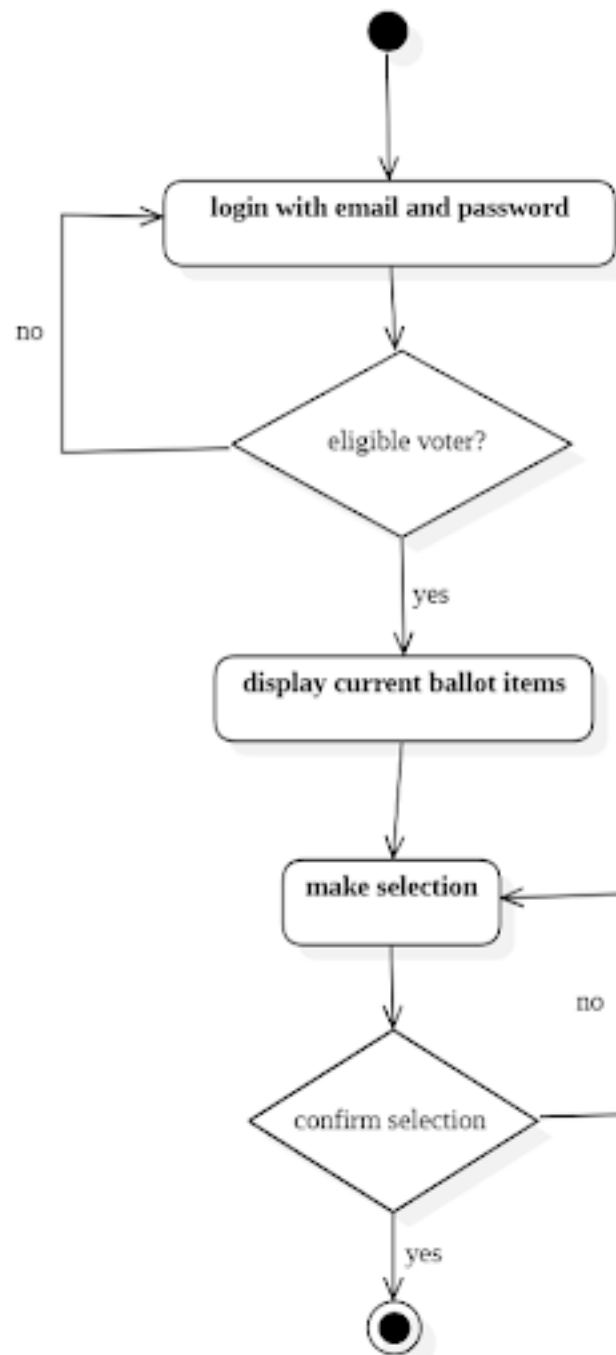


Figure 3.7: Activity diagram for voting

3.3 SDLC

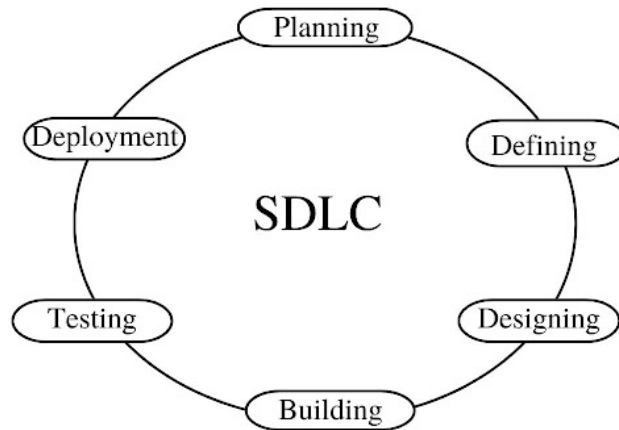


Figure 3.8: Software Development Life Cycle Diagram

Incremental Model

The incremental model is a process of software development where requirements are divided into multiple standalone modules of the software development cycle. The incremental process model is also known as the Successive version model. This model emphasizes the full phase dynamic growing software. Since the E-voting software of our project is also a kind of dynamic software that needs the continuous development and full phase growth of different features like login portals, Confirmation Portals, Voting Selection Portals, etc.

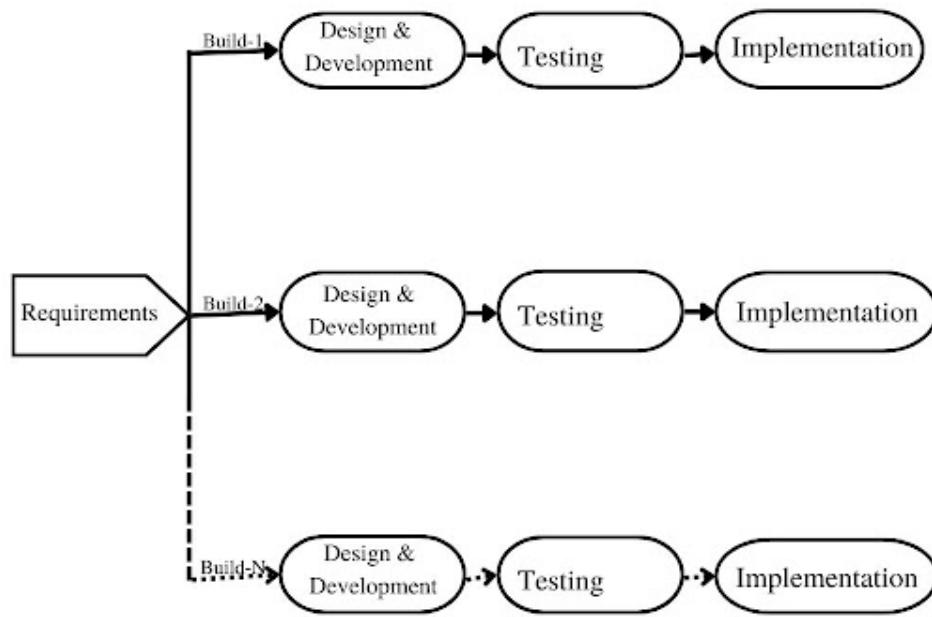


Figure 3.9: Incremental Model from 1 to N no of steps

Incremental Models include the different building phases. Like Build-1, Build-2, Build-3.....to.....Build-N phases, where build 'N' is the defined possible steps.

- Build-1: Login
- Build-2: API
- Build-3: Solidity Contracts
- Build-4: Acquire Voting from Voters

This is an example where Figure 3.9 of page 14 is referenced. Detracto suavitate id per, no est putent accusata quaestio, purto quaeque oporteat ei sea. Id eam erat affert, ex has summo inimicus partiendo. Option aliquam imperdiet ius ex. Efficiendi omittantur in mea, id usu tacimates rationibus. Ei accusamus dissentias vix, eos aperiam percipit id.

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3.4 Section for Sample Table

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Table 3.1: Table Example

x	3	4	5	5	5
f(x)	111	22	30	40	500

3.4.1 Referring Table

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3.5 Complex Table from Excel

Complex tables can be created in MS-Excel and latex code for the table can be generated using "excel2latex" add-in. An example of a complex table is shown in Table 3.2 in page 16

you can download excel2latex add-in from

<https://www.ctan.org/tex-archive/support/excel2latex>

Some extra packages are required. like bigstrut, multirow etc. Mea cu vitae noluisse.

Table 3.2: Complex table converted from Excel using excel2latex

SN	Col 1	Col 2	Col 3		Col 4
1	Merged Cells 1		a	b	e
2			c	d	f
3	Merged Cells 2				
4	abc	Merged Cells 3	a1	a2	
			a3	q	
			a4		as
5	a11				qq
			Merged		

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CHAPTER 4

EQUATIONS

4.1 Basics of Equations

Mathematical expression within text can be written as $y = mx + c$. In separate line as

$$ax + by + c = 0$$

Some latex mathematics examples:

Superscript:

$$x^3$$

$$x^3$$

$$x^{3x+4}$$

$$x^{3x+4^4+5}$$

Subscript:

$$x_{13}$$

$$x_{12}$$

$$x_{123}$$

Greek letters

$$\pi$$

$$\alpha$$

$\alpha A \beta \beta B \delta \gamma \vartheta \Theta \phi \varphi \Phi$ trigonometric: $y = \sin(\pi)$ Log: $y = \log(\pi)$ $y = \ln(\pi)$
 $y = \log_{10}$ Square root: $\sqrt{2}$ $\sqrt[3]{4}$ $\sqrt{x^2 + y^2}$ $\sqrt[3]{x^2 + y^2}$ $\sqrt{\sqrt[3]{x^2 + y^2}}$ Fraction: About $\frac{2}{3}$
of the class is full. About $\frac{2}{3}$ of the class is full. About $\frac{2}{3}$ of the class is full. About
 $\frac{\sqrt{\sqrt[3]{x^2 + y^2}}}{\sqrt{x^2 + x + 1}}$ of About $\frac{2}{1 + \sqrt{\sqrt[3]{x^2 + y^2}}}$ of the class is full.

Reserved characters: $\{a, b, c\}$ \$20 10%of100is100 10 % of 100 is 100

Braket Style: $3(\frac{2}{3})$ $3\left(\textit{Hello}(\frac{2}{3})\right)$ $3\left\{\textit{Hello}(\frac{2}{3})\right\}$ $3\left\{\textit{Hello}(\frac{2}{3})\right. 3\left.\textit{Hello}(\frac{2}{3})\right.$ $\left.\frac{dy}{dx}\right|_{x=1}$ $(((($
 $\left(3(\frac{2}{3}) 3\left(\frac{2}{3}\right)$

Equation:

$$E = mc^2 \tag{4.1}$$

$$E = mc^2$$

$$E = mc^2$$

$$E = mc^2 \tag{4.2}$$

$$E = mc^4 \tag{4.3}$$

$$E = mc^7 \tag{4.4}$$

$$E = mc^2$$

$$E = mc^4$$

$$E \approx \pm (mc^7 + 3)$$

$$E \approx \pm (mc^7 + 3)$$

$$E \; = \; mc^2 \tag{4.5}$$

$$E \; = \; mc^4$$

$$E \; \approx \; \pm (mc^7 + 3) \tag{4.6}$$

Limit: $\lim_{x \rightarrow a} f(x)$

$\lim_{x \rightarrow a} \frac{f(x)-f(a)}{x-a} = f'(a)$ Integration: \int

$\int (\sin x \, dx =)$

$$\int (\sin x \, dx) = \int_a^b (\sin x \, dx) = \int_a^b x^2 \, dx = \left[\frac{x^3}{3} \right]_a^b$$

Summation: $\sum_{n=1}^{10} \int_a^b f(x) \, dx = \lim_{x \rightarrow \infty} \sum_{K=1}^{10} f(x_k) \cdot \delta x$

4.2 Referencing the Equation

The Equation can be referenced using labels. example Equation 4.2 of page 19 is referenced here. LaTeX is the de facto standard for the communication and publication of scientific documents. LaTeX is available as free software.

CHAPTER 5

LISTING EXAMPLES

Here are some examples of listing

Ordered List Technique:

Listing Technique 1:

1. Pencil
2. Paper
3. Calculator
4. Notebook
 - (a) Assignment
 - i. Test
 - A. Test 1
 - B. Test 2
 - ii. Quiz
 - (b) Classwork

Listing Technique 2:

- Pencil
- Paper
- Calculator
- Notebook
 - Assignment
 1. Test
 - * Test 1
 - * Test 2
 2. Quiz
 - Classwork

Listing Technique 3:

1. Pencil
2. Paper

3. Calculator

4. Notebook

A Assignment

I Test

i Test 1

ii Test 2

II Quiz

B Classwork

5.1 The Subsections

LaTeX is a document preparation system for the communication and publication of scientific documents.

It is most often used for medium-to-large technical or scientific documents but it can be used for almost any form of publishing. as said in 1.1 of page no. 1 LaTeX is the de facto standard for the communication and publication of scientific documents. LaTeX is available as free software.

The subsubsection

LaTeX is a document preparation system for the communication and publication of scientific documents.

It is most often used for medium-to-large technical or scientific documents but it can be used for almost any form of publishing.

LaTeX is the de facto standard for the communication and publication of scientific documents. LaTeX is available as free software.

The paragraph LaTeX is a document preparation system for the communication and publication of scientific documents.

It is most often used for medium-to-large technical or scientific documents but it can be used for almost any form of publishing.

The subparagraph LaTeX is a document preparation system for the communication and publication of scientific documents.

It is most often used for medium-to-large technical or scientific documents but it can be used for almost any form of publishing.

CHAPTER 6

EXAMPLE ABBR AND SYMBOLS

6.1 Abbr

Here is an example of writing abbreviations ABC is abbr of Annapurna Base Camp UN is abbr of United Nations

6.2 Symbols

Now the symbol α is the Transparency Factor a is abbr of Area of Triangle Note that only those abbrs and bymbols that are included in the text will be listed in List of Abbr/Symbols.

CHAPTER 7

CITATION EXAMPLE

7.1 Citation and compiling bib file

This is an example of citing texts [?]. This is second citation [?] The first cited reference will be numbered "1", second "2" and so on. Only those cited in the document will be listed in the reference section.

Note that to compile documents with reference correctly, you need to follow following steps:

1. Run pdfLatex (or Quick build)
2. Run Bibtex
3. Run pdflatex 2 times

Tation eirmod iracundia sea no, duo no aliquando elaboraret. Qui ut legere mucius, dolore efficiendi definitionem quo ex. Usu te falli similique posidonium, eum eu dicat aeterno phaedrum, te paulo deleniti ius. Pro te aliquam platonem, eos ea dolore phaedrum. Graece honestatis sit at, nec id ubique legendos. Detracto suavitate id per, no est putent accusata quaestio, purto quaeque oporteat ei sea. Id eam erat affert, ex has summo inimicus partiendo. Option aliquam imperdiet ius ex. Efficiendi omittantur in mea, id usu tacimates rationibus. Ei accusamus dissentias vix, eos aperiam percipit id.

Mea cu vitae noluisse. Tation eirmod iracundia sea no, duo no aliquando elaboraret. Qui ut legere mucius, dolore efficiendi definitionem quo ex. Usu te falli similique posidonium, eum eu dicat aeterno phaedrum, te paulo deleniti ius. Pro te aliquam platonem, eos ea dolore phaedrum. Graece honestatis sit at, nec id ubique legendos. Detracto suavitate id per, no est putent accusata quaestio, purto quaeque oporteat ei sea. Id eam erat affert, ex has summo inimicus partiendo. Option aliquam imperdiet ius ex. Efficiendi omittantur in mea, id usu tacimates rationibus. Ei accusamus dissentias vix, eos aperiam percipit id.

APPENDIX

Appendix Text Comes Here