VISVESVARAYA TECHNOLOGICAL UNIVERSITY
Jnana Sangama, Belagavi - 590 018

PROJECT REPORT ON

Technical Writing Using Latex Lab

Thesis submitted in partial fulfillment for the Award of Degree of
Bachelor of Engineering
in
Computer Science And Engineering

Submitted by

ANSIL KUMAR 4AL22CS012

Under the Guidance of
Dr. Madhusudhan S
Associate Professor

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
(Accredited by NBA for the Academic years 2019-2025)

ALVA'S INSTITUTE OF ENGINEERING AND TECHNOLOGY
(AICTE Approved, VTU Affiliated and NAAC 'A' Accredited)
(UG Programs - CSE, ECE, ISE, EIE and EEE have been Accredited by NBA for the Academic years 2019-2025)
Shobhavana Campus, Mijar,Moodbidri, D.K,Karnataka-574225
2023-24

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Shobhavana Campus, Mijar, Moodbidri, D.K, Karnataka-574225

2023-24

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING (Accredited by NBA for the Academic years 2019-2025)

CERTIFICATE

Certified that the Thesis work entitled **"Technical Writing Using LaTex Report"** is carried out by **ANSIL KUMAR(4AL22CS012)** in partial fulfillment for the award of degree of Bachelor of Engineering in **Computer Science And Engineering** of Visvesvaraya Technological University, Belagavi, during the year 2023-2024. It is certified that all corrections / suggestions indicated during internal assessment have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in aspect of the project work prescribed for the award of degree of **Bachelor of Engineering**.

Dr.Madhusudhan S	Dr. Manjunath Kotari	Dr.Peter Fernandies
Associate Professor	Head of the Department	Principal

External Viva

Name of the examiners	Signature with date
1	.....
2	.....

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Shobhavana Campus, Mijar, Moodbidri, D.K, Karnataka-574225

2023-24

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING (Accredited by NBA for the Academic years 2019-2025)

DECLARATION

We here by declare that the entire work emobodied in this project report titled, **"Technical Writing Using LaTex Report"** submitted to **Visvesvaraya Technological University**, Belagavi, is carried out at the department of **Computer Science And Engineering, Alva's Institute Of Engineering And Technology, Moodbidri** under the guidance of **Dr. Madhusudhan S**, Associate Professor. This report has not been submitted for the award of any Diploma or Degree of this or any other University.

Name	USN	Signature
ANSIL KUMAR	**4AL22CS012**	.....

Please embed your paper publishing certificate here

Acknowledgement

The joy and satisfaction that accompany the successful completion of any task would be incomplete without thanking those who made it possible. We consider ourselves proud to be a part of Alva's Institute of Engneering & Technology, the institution which moulded us in all our endeavors.

We express our gratitude to our beloved Chairman **Dr. Vivek Alva**, for providing state of art facilities.

We would like to express our sincere thanks to **Dr. Peter Fernandies**, Principal and **Dr. Manjunath Kotari**, Professor and HOD, Department of CSE, for their valuable guidance and encouragement throughout our program.

We express our profound gratitude to the coordinators who have given valuable suggestions and guidance throughout the project. We would like to express our sincere gratitude to our guide Dr.Madhusudhan S, Associate Professor, for his guidance, continuous support and motivation in completing the project successfully.

Finally, we take this opportunity to extend our earnest gratitude and respect to our parents, teaching and non-teaching staff of the department, the library staff and all our friends who have directly or indirectly supported us.

ANSIL KUMAR

Abstract

LaTeX eases our pressure in writing thesis & reports because of its powerful features such as automatic hyphenation, table of contents, figures & tables, powerful bibliography tool, citations, Automatic Numbering of Chapter, sections, figures & tables, its beautiful fonts, professional output...

Writing too much of code for gives bad impression on LaTeX. But now we have numerous guiding tools like gedit-latex-plugin, TEXmaker, Lyx & emacs, which are very much user friendly.

This VTU-project-report-template is written using popular document class, "Memoir". In the coming chapters, we have given small help manual required for writing report & at the end about template.

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List of Figures

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Acronyms

PCB : Printed Circuit Board

Chapter 1

Experiment 1: Develop a LaTeX script to create a simple document that consists of 2 sections [Section1, Section2], and a paragraph with dummy text in each section. And also include header [title of document] and footer [institute name, page number] in the document.

```
\pagestyle{fancy}
\fancyhf{}
\rfoot{\thepage}
\lhead{\textit{First Program}}
\lfoot{\textit{Alva's Institude of enginerring and technology}}
% Document

\section{Section 1}
\lipsum[1] % Dummy text
\section{Section 2}
\lipsum[2] % Dummy text
```

1 Section 1

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris. Nam arcu libero, nonummy eget, consectetuer id, vulputate a, magna. Donec vehicula augue eu neque. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Mauris ut leo. Cras viverra metus rhoncus sem. Nulla et lectus vestibulum urna fringilla ultrices. Phasellus eu tellus sit amet tortor gravida placerat. Integer sapien est, iaculis in, pretium quis, viverra ac, nunc. Praesent eget sem vel leo ultrices bibendum. Aenean faucibus. Morbi dolor nulla, malesuada eu, pulvinar at, mollis ac, nulla. Curabitur auctor semper nulla. Donec varius orci eget risus. Duis nibh mi, congue eu, accumsan eleifend, sagittis quis, diam. Duis eget orci sit amet orci dignissim rutrum.

2 Section 2

Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

Chapter 2

Experiment 2: Develop a LaTeX script to create a document that displays the sample Abstract/Summary.

```
\title{Sample Abstract/Summary}
\author{}
\date{}


        \maketitle

        \section*{Abstract}
        \lipsum[1]

        \vspace{0.5cm}

    \lipsum[3]
```

Sample Abstract/Summary

Abstract

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris. Nam arcu libero, nonummy eget, consectetuer id, vulputate a, magna. Donec vehicula augue eu neque. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Mauris ut leo. Cras viverra metus rhoncus sem. Nulla et lectus vestibulum urna fringilla ultrices. Phasellus eu tellus sit amet tortor gravida placerat. Integer sapien est, iaculis in, pretium quis, viverra ac, nunc. Praesent eget sem vel leo ultrices bibendum. Aenean faucibus. Morbi dolor nulla, malesuada eu, pulvinar at, mollis ac, nulla. Curabitur auctor semper nulla. Donec varius orci eget risus. Duis nibh mi, congue eu, accumsan eleifend, sagittis quis, diam. Duis eget orci sit amet orci dignissim rutrum.

Nulla malesuada porttitor diam. Donec felis erat, congue non, volutpat at, tincidunt tristique, libero. Vivamus viverra fermentum felis. Donec nonummy pellentesque ante. Phasellus adipiscing semper elit. Proin fermentum massa ac quam. Sed diam turpis, molestie vitae, placerat a, molestie nec, leo. Maecenas lacinia. Nam ipsum ligula, eleifend at, accumsan nec, suscipit a, ipsum. Morbi blandit ligula feugiat magna. Nunc eleifend consequat lorem. Sed lacinia nulla vitae enim. Pellentesque tincidunt purus vel magna. Integer non enim. Praesent euismod nunc eu purus. Donec bibendum quam in tellus. Nullam cursus pulvinar lectus. Donec et mi. Nam vulputate metus eu enim. Vestibulum pellentesque felis eu massa.

Chapter 3

Experiment 3: Develop a LaTeX script to create a simple title page of the VTU project Report [Use suitable Logos and text formatting].

```
\begin{center} % Centering content
% University Details
\textbf{{\large VISVESVARAYA TECHNOLOGICAL UNIVERSITY}}\\
{\normalsize Jnana Sangama, Belgaum-590018}\\
\vspace{0.3in}
\includegraphics[scale=0.3]{images/vtu.png}\\
\vspace{0.3in}
```

```
% Title and Project Details
\textbf{A PROJECT REPORT} \\
ON \\
\vspace{0.2in}
\textbf{{\large "Create Report Format Using LaTeX"}}\\
\vspace{0.1in}
{\small Submitted in partial fulfillment of the requirements for the
Fifth Semester degree of Bachelor of Engineering in Computer
Science Engineering of Visvesvaraya Technological
```

```
University, Belagavi}\\
\vspace{0.1in}
\textbf{BACHELOR OF ENGINEERING\\IN\\COMPUTER SCIENCE AND ENGINEERING\\
\vspace{0.2in}




% Student Details
Submitted by\\
\vspace{0.08in}
\begin{tabular}{ll}
\textbf{4AL22CS012} & \textbf{ANSIL KUMAR}\\
\end{tabular}
\vspace{0.2in}




% Guide Details
\textbf{Under the Guidance of}\\
Mr.Madhusudhan\\
Asst. Professor Department of CSE\\
\vspace{0.2in}




% College Details
\includegraphics[scale=0.3]{images/alvas logo.jpg}\\
\vspace{0.01in}
{\small DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING}\\
\vspace{0.1in}
\textbf{Alvas Institute of technology and ENGINEERING }\\
{\small NAAC accredited Approved by AICTE, New Delhi, Affiliated to VTU,
\vspace{0.1in}
{\small 2024-2025}\\
\end{center}
```

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

Jnana Sangama, Belgaum-590018

A PROJECT REPORT

ON

"Create Report Format Using LaTeX"

Submitted in partial fulfillment of the requirements for the Fourth Semester degree of Bachelor of Engineering in Computer Science Engineering of Visvesvaraya Technological University, Belagavi

BACHELOR OF ENGINEERING
IN
COMPUTER SCIENCE AND ENGINEERING

Submitted by

4AL22CS012 ANSIL KUMAR

Under the Guidance of

Mr.Madhusudhan
Associate Professor, Department of CSE

ALVA'S
Education Foundation®

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Alvas Institute of technology and ENGINEERING

NAAC accredited Approved by AICTE, New Delhi, Affiliated to VTU, belagavi, mijar moodbidri 574174

2023-2024

Chapter 4

Experiment 4: Develop a LaTeX script to create the Certificate Page of the Report [Use suitable commands to leave the blank spaces for user entry].

```
\begin{center}
\textbf{{\large VISVESVARAYA TECHNOLOGICAL UNIVERSITY}}\\
{\normalsize Jnana Sangama, Belgaum-590018}\\
\vspace{0.5in}
\includegraphics[scale=0.3]{images/vtu.png}\\
\vspace{0.5in}
\textbf{CERTIFICATE}\\
\vspace{0.3in}
This is to certify that \\
\vspace{0.2in}
\textbf{ANSIL KUMAR}\\
\vspace{0.2in}
bearing University Seat Number \\
\vspace{0.2in}
\textbf{4AL22CS012}\\
has satisfactorily completed the project work entitled \\
\vspace{0.2in}
\textbf{TECHNICAL WRITING USING LATEX PROJECT}\\
\vspace{0.2in}
towards the partial fulfillment of the requirements for the award of the
 degree of\\
\vspace{0.2in}
\textbf{BACHELOR OF ENGINEERING\\IN\\COMPUTER SCIENCE AND ENGINEERING}\\
\vspace{0.2in}
```

```
\textbf{Guide} \hspace{3.5in} \textbf{Head of the Department}\\
\vspace{0.1in}
\textbf{Mr.Madhusudhan} \hspace{2.7in} \textbf{Dr.Manjunath Kotari}\\
\vspace{0.1in}
\textbf{Assistant Professor} \hspace{2in} \textbf{Head of the
Department}\\
\vspace{0.1in}
\textbf{Department of CSE} \hspace{2.1in} \textbf{Department of CSE}\\
\vspace{0.1in}
\includegraphics[scale=0.3]{images/alvas logo.jpg}\\
\vspace{0.5in}
{\small DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING}\\
\vspace{0.1in}
\textbf{Alvas Institute of technology and ENGINEERING }\\
{\small NAAC accredited Approved by AICTE, New Delhi, Affiliated to VTU,
\vspace{0.1in}
{\small 2024-2025}\\
\end{center}
```

ALVAS INSTITUTE OF ENGINEERING AND TECHNOLOGY

(AICTE Approved, VTU Affiliated and NAAC 'A' Accredited)
Shobhavana Campus MIJAR, Moodbidri, Mangaluru, Karnataka 574225

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
(Accredited by NBA)

CERTIFICATE

Certified that the Thesis work entitled "Technical Writing using LaTeX" is carried out by ANSIL KUMAR (4AL22CS012), in partial fulfillment for the award of degree of Bachelor of Engineering in **Computer Science and Engineering** of Visvesvaraya Technological University, Belagavi, during the year 2023-2024. It is certified that all corrections / suggestions indidicated during internal assessment have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in ments in aspect of the project work prescribed for the award of degree of **Bachelor of Engineering**.

Dr.Madhusudhan.S	Dr. Manjunath Kotari	Dr. Peter Fernandes
Associate Professor	Head of the Department	Principal

External Viva

Name of the examiners	Signature with date
1	.....
2	.....

Chapter 5

Experiment 5: Develop a LaTeX script to create a document that contains the following table with proper labels.

```
\renewcommand{\arraystretch}{1.2} % Adjust vertical spacing in tables
\centering
\textbf{\Large{Student Details and Marks}} % Title
\vspace{0.1in}
\begin{table}[h]
\centering
\begin{tabular}{|c|c|c|c|c|}
% Define table with 6 columns, all centered
\hline
\multirow{2}{*}{\textbf{S.No}} & \multirow{2}{*}{\textbf{USN}} &
 \multirow{2}{*}{\textbf{Student Name}} &
\multicolumn{3}{c|}{\textbf{Marks}}\\

\cline{4-6} % Horizontal line from column 4 to 6
& & & \textbf{MATHS} & \textbf{JAVA} & \textbf{DSA} \\
% Sub-headers for marks
\hline
\multicolumn{1}{|c|}{1} & \multicolumn{1}{c|}{4AL22CS042} &
 \multicolumn{1}{c|}{chaitanya} & 90 & 95 & 90 \\ % Data rows
\hline
\multicolumn{1}{|c|}{2} & \multicolumn{1}{c|}{4AL22CS012} &
\multicolumn{1}{c|}{ANSIL} & 68 & 75 & 41 \\
\hline
\multicolumn{1}{|c|}{3} & \multicolumn{1}{c|}{4AL22CS047} &
\multicolumn{1}{c|}{Glanil Tauro} & 43 & 41 & 59 \\
\hline
```

```
\end{tabular}
\end{table}
```

Student Details and Marks

S.No	USN	Student Name	Marks		
			MATHS	JAVA	DSA
1	4AL22CS042	CHAITANYA	90	95	90
2	4AL22CS012	ANSIL	68	75	41
3	4AL22CS047	GLANIL T.	43	41	59

Chapter 6

Experiment 6: Develop a LaTeX script to include the side-by-side graphics/pictures/figures in the document by using the subgraph concept.

```
\begin{figure}[H]
        \centering
        \begin{subfigure}{0.3\linewidth}
        \includegraphics[width=\linewidth]{images/lion.jpg}
                \caption{figure1}

        \end{subfigure}
        \hfill
        \begin{subfigure}{0.3\linewidth}
        \includegraphics[width=\linewidth]{images/lion2.jpg}
                \caption{figure  2}

        \end{subfigure}

\end{figure}
```

(a) figure1

(b) figure 2

Chapter 7

Experiment 7: Develop a LaTeX script to create a document that consists of the following two mathematical equations

```
\begin{equation}
x=\frac{-b\pm \sqrt{b^2 - 4ac}}{2a}
\end{equation}
\begin{equation}
x=\frac{-2\pm\sqrt{2^2-4(1)(-8)}}{2(1)}
\end{equation}
\begin{equation}
x=\frac{-2\pm\sqrt{4+32}}{2}
\end{equation}
```

[1]

Equations Set 1

$$x = -b \pm \sqrt{\sqrt[4]{b^2 - 4ac}}$$

$$x = \frac{-b \pm \sqrt{22 - 4 \cdot 1 \cdot (-8)}}{2 \cdot 1} = \frac{-b \pm \sqrt{\sqrt{4 + 32}}}{2} = \frac{-b \pm \sqrt{2}}{2}$$

Equations Set 2

$$\begin{aligned} \varphi_\sigma^\lambda \cdot A_t &= \sum_{\pi \in C_t} \operatorname{sgn}(\pi) \cdot \varphi_\sigma^\lambda \cdot \varphi_\pi^\lambda \\ &= \sum_{\tau \in C_\sigma^t} \operatorname{sgn}(\sigma^{-1}\tau\sigma) \varphi_\sigma^\lambda \varphi_{\sigma^{-1}\tau\sigma}^\lambda \\ &= A_\sigma^t \varphi_\sigma^\lambda \end{aligned}$$

Chapter 8

Experiment 8: Develop a LaTeX script to demonstrate the presentation of Numbered theorems, definitions, corollaries, and lemmas in the document.

```
\newtheorem{theorem}{Theorem}[section]
\newtheorem{definition}[theorem]{Definition}
\newtheorem{corollary}[theorem]{Corollary}
\newtheorem{lemma}[theorem]{Lemma}
        \section{Introduction}

        \begin{theorem}
                This is a theorem.
        \end{theorem}

        \begin{definition}
                This is a definition.
        \end{definition}

        \begin{corollary}
                This is a corollary.
        \end{corollary}

        \begin{lemma}
                This is a lemma.
        \end{lemma}

        \section{Another Section}
```

```
\begin{theorem}
        Another theorem.
\end{theorem}
```

1 Introduction

Theorem 1.1. *This is a theorem.*

Definition 1.2. *This is a definition.*

Corollary 1.3. *This is a corollary.*

Lemma 1.4. *This is a lemma.*

2 Another Section

Theorem 2.1. *Another theorem.*

Chapter 9

EXPERINMENT 9: Develop a LaTeX script to create a document that consists of two paragraphs with a minimum of 10 citations in it and display the reference in the section

```
\documentclass[]{report}
\usepackage{hyperref}
\begin{document}
question: Latex Script to create a documnet that consists of two
parargraphs with a minimum number of 10 citations in it and
display the reference in the section\\
LaTeX Features\\
Typesetting journal articles,\\ technical reports,\\
books, and slide presentations.\\
Control over large documents containing sectioning,\\
cross=references,\\ tables and figures.\\
Typesetting of complex mathematical formulas.\\
Advanced typesetting of mathematics with AMS=LaTeX.\\
Automatic generation of bibliographies and indexes.\\
Multi=lingual typesetting.\\
Inclusion of artwork, and process or spot colour.\\
Using PostScript or Metafont fonts.
For more details refer books \cite{ref1}, \cite{ref5},
\cite{ref6} and tutorials \cite{ref3}, \cite{ref4}, IEEE templates
\cite{ref7} , IISc thesis template \cite{ref10} and web pages
\cite{ref8} and \cite{ref9}.
\begin{thebibliography}{20}
```

```
\bibitem{ref1} Firuza Karmali (AIBARA):\emph{A Short Introduction
to LaTeX= A book for beginners}, 2019

\bibitem{ref3} LaTeX TUTORIAL [https://latex=tutorial.com/tutorials/]
 \url{https://www.google.com/url?sa=t&source=web&rct=j&opi=
89978449&url=https://latex=tutorial.com/&ved=2ahUKEwjQqvLw
156HAxXxUGwGHbOWB8kQFnoECAcQAQ
&usg=AOvVaw2bd17nDxV98mf3xPuON00 }
\bibitem{ref4} LaTeX TUTORIAL [https://www.javatpoint.com/latex]
 \url{http://en.wikipedia.org/wiki/Virtual Network Computing}
\bibitem{ref5}Leslie Lamport (1994) \emph{\LaTeX: a document
preparation system}, Addison
Wesley, Massachusetts, 2nd ed.
\bibitem{ref6}Donald E. Knuth (1986) \emph{The \TeX{} Book},
Addison=Wesley Professional.
\bibitem{ref7}IEEE Template selector \url{https://www.google.com/url?sa=
source=web&rct=j&opi=89978449&url=
https://template=selector.ieee.org/&ved=2ahUKEwjHyq
=61J6HAxVXSGcHHQuADpMQF
noECBcQAQ&usg=AOvVaw2JlY7TroAxyDRUuVTDh=Ot}
\bibitem{ref8}Introduction to LaTeX = Writing papers the
 right way \url{https://www.google.com/url?sa=t&source
=web&rct=j&opi=89978449&url=https://web.mit.edu/rsi/
www/pdfs/new=latex.pdf&ved=2ahUKEwjEqq=hyp6HAxX5S
mwGHUe6A7kQFnoECBMQAw&usg=AOvV
aw2Q l8nVb1tt8Gu8GsiqDqq}
\bibitem{ref9}An Overview of LATEX \url{https://www.google
.com/url?sa=t&source=web&rct=j&opi=89978449&url=http:
//clweb.csa.iisc.ac.in/pavithra/talks/latex tutorial.pdf&ved=2a
hUKEwi24cDQzZ6HAxVicGwGHRHe
B 4QFnoECBMQAQ&usg=AOvVaw0gVsgpQKWqnm6hR=1 iycH}
\bibitem{ref10}Thesis templates \url{https://www.google.com/url?sa=t&sou
web&rct=j&opi=89978449&url=https://etd.iisc.ac.in/static/etd/instruction
ahUKEwjwkfHRzp6HAxUeR2wGHWnODEYQ
FnoECBcQAQ&usg=AOvVaw14mAK 7RZ5wDAFLOPL1qI5}
\end{thebibliography}
\end{document}
```

question: Latex Script to create a documnet that consists of two parargraphs with a minimum number of 10 citations in it and display the reference in the section
LaTeX Features
Typesetting journal articles,
technical reports,
books, and slide presentations.
Control over large documents containing sectioning,
cross=references,
tables and figures.
Typesetting of complex mathematical formulas.
Advanced typesetting of mathematics with AMS=LaTeX.
Automatic generation of bibliographies and indexes.
Multi=lingual typesetting.
Inclusion of artwork, and process or spot colour.
Using PostScript or Metafont fonts. For more details refer books [1], [2], [5], [6] and tutorials [3], [4], IEEE templates [7] , IISc thesis template [10] and web pages [8] and [9].

Bibliography

[1] Firuza Karmali (AIBARA):*A Short Introduction to LaTeX= A book for beginners*, 2019

[2] Peter Flynn:*A Beginner's Introduction to Typesetting with LaTeX*, Comprehensive Tex Archive Network, 2005

[3] LaTeX TUTORIAL [https://latex=tutorial.com/tutorials/] `https://www.google.com/url?sa=t&source=web&rct=j&opi=89978449&url=https://latex=tutorial.com/&ved=2ahUKEwjQqvLw156HAxXxUGwGHbOWB8kQFnoECAcQAQ&usg=AOvVaw2bd17nDxV98mf3xPuON00`

[4] LaTeX TUTORIAL [https://www.javatpoint.com/latex] `http://en.wikipedia.org/wiki/VirtualNetworkComputing`

[5] Leslie Lamport (1994) *LaTeX: a document preparation system*, Addison Wesley, Massachusetts, 2nd ed.

[6] Donald E. Knuth (1986) *The TeX Book*, Addison=Wesley Professional.

[7] IEEE Template selector `https://www.google.com/url?sa=t&source=web&rct=j&opi=89978449&url=https://template=selector.ieee.org/&ved=2ahUKEwjHyq=61J6HAxVXSGcHHQuADpMQFnoECBcQAQ&usg=AOvVaw2JlY7TroAxyDRUuVTDh=Ot`

[8] Introduction to LaTeX = Writing papers the right way `https://www.google.com/url?sa=t&source=web&rct=j&opi=89978449&url=https://web.mit.edu/rsi/www/pdfs/new=latex.pdf&ved=2ahUKEwjEqq=hyp6HAxX5SmwGHUe6A7kQFnoECBMQAw&usg=AOvVaw2Ql8nVb1tt8Gu8GsiqDqq`

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Chapter 10

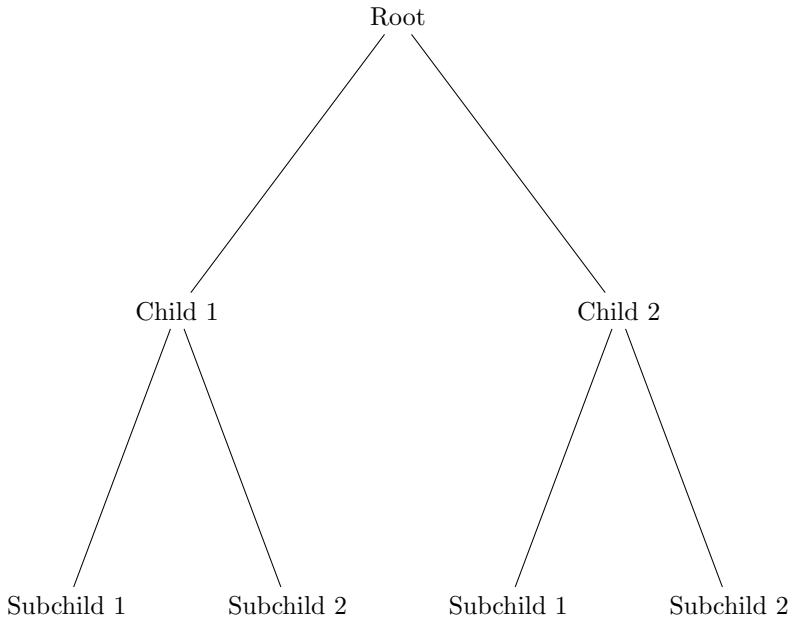
Experiment 10: Develop a LaTeX script to design a simple tree diagram or hierarchical structure in the document with appropriate labels using the Tikz library.

```
\centering

% Define styles for nodes
\tikzstyle{level 1}=[level distance=4cm, sibling distance=6cm]
\tikzstyle{level 2}=[level distance=4cm, sibling distance=3cm]

% Begin TikZ picture
\begin{tikzpicture}[grow=down, sloped]
        % Root node
        \node {Root}
        % First child
        child {
                node {Child 1} % First child node
                child {
                        node {Subchild 1} % Subchild node
                }
                child {
                        node {Subchild 2} % Subchild node
                }
        }
        % Second child
        child {
                node {Child 2} % Second child node
                child {
```

```
                    node {Subchild 1} % Subchild node
                }
                child {
                    node {Subchild 2} % Subchild node
                }
            };
    \end{tikzpicture}
```


Root
Child 1
Child 2
Subchild 1
Subchild 2
Subchild 1
Subchild 2

Chapter 11

Experiment 11: Develop a LaTeX script to present an algorithm in the document using algorithm/ algorithmic/ algorithm2e Library.

```
\begin{algorithm}
        \caption{Bubble Sort}
        \begin{algorithmic}[1]
                \Procedure{BubbleSort}{$A, n$}
                \For{$i \gets 0$ to $n-1$}
                \For{$j \gets 0$ to $n-1-i$}
                \If{$A[j] > A[j+1]$}
                \State Swap $A[j]$ and $A[j+1]$
                \EndIf
                \EndFor
                \EndFor
                \EndProcedure
        \end{algorithmic}
\end{algorithm}
```

Algorithm 1 Bubble Sort

```
1: procedure BubbleSort(A, n)
2:     for i ← 0 to n − 1 do
3:         for j ← 0 to n − 1 − i do
4:             if A[j] > A[j + 1] then
5:                 Swap A[j] and A[j + 1]
6:             end if
7:         end for
8:     end for
9: end procedure
```

Algorithm 1 Bubble Sort

```
1: procedure BubbleSort(A, n)
2:     for i ← 0 to n − 1 do
3:         for j ← 0 to n − 1 − i do
4:             if A[j] > A[j + 1] then
5:                 Swap A[j] and A[j + 1]
6:             end if
7:         end for
8:     end for
9: end procedure
```

Chapter 12

Experiment 12: Develop a LaTeX script to create a simple report and article by using suitable commands and formats of user choice.

```
\documentclass[12pt,a4paper,oneside]{memoir}
\usepackage{graphicx}
\usepackage[english]{babel}
\usepackage[a4paper,right=1in]{geometry}
\usepackage{hyperref}
\usepackage{listings}
\usepackage{pdfpages}
\usepackage{xcolor}
\usepackage{afterpage}
\usepackage{background}
\usepackage{caption}
\usepackage{float}
\usepackage{subcaption}
\usepackage{amsthm}
\usepackage{algorithm}
\usepackage{algpseudocode}
\usepackage{lipsum}
\usepackage{array, booktabs, multicol,multirow} % Load necessary package
\usepackage{fancyhdr}
```

```
\renewcommand{\afterchapternum}{\par\bigskip}
\setlength{\beforechapskip}{-2\baselineskip}
%To reduce%the Chapter vertical height.
```

```
%document starts here
\begin{document}
        \newlength{\toptafiddle}
        \newlength{\bottafiddle}
        \include{frontpage}
        \include{title}%include titlepage,i.e, title.tex file
        %Page layout according to VTU specification
        %Right=1.25in,left=1in, Top & Bottom 0.75in in each

        \setlength{\oddsidemargin}{0.25in}%left side margin{1in by defau

        %header specification
        \setlength{\headheight}{\onelineskip}
        \setlength{\headsep}{4pt}
        \setlength{\topmargin}{-0.25in}

        %footer specification
        \setlength{\footskip}{0.7cm}
        \setlength{\footnotesep}{0.7cm}

        %A4 paper height = 11.69in
        %thus 11.69in-9.67in-1in(top+header) is approx 0.75in left for b
        \setlength{\textheight}{9.60in}
        \brokenpenalty=10000
        \OnehalfSpacing

        \include{certificate}
        \include{decleration}
        \include{publishingcertificate}

        \pagenumbering{roman}
        \pagestyle{plain}
        %\include{abstract}
        \include{acknowledge}
        \include{abstract}



        \setcounter{secnumdepth}{3}%sections numbering upto 3 level
```

```
        \renewcommand{\contentsname}{Table of Contents}
        \tableofcontents
        \newpage
        \listoffigures
        \newpage
        \listoftables

        \include{acronyms}



        \pagestyle{plain}
        \makeheadrule{plain}{\textwidth}{0.4pt}
        \makefootrule{plain}{\textwidth}{0.4pt}{\footruleskip}
        \makeoddhead{plain}{\small{Technical Writing Using LaTex}}{}{\sm
        \makeoddfoot{plain}{\small{Dept Of CSE,AIET,Moodbidri}}{}{\small

        \pagenumbering{arabic}



        \index{key}

        \include{chapter1}
        %\include{orgofreport}
        \include{chapter2}
        \include{chapter3}
        \include{chapter4}



        \include{conclusion}
        \include{reference}
        \include{appendix}
\end{document}
```

Simple Report

Contents

1 Introduction **2**

2 Methods **3**

3 Results **4**

4 Discussion **5**

5 Conclusion **6**

Chapter 1

Introduction

This is the introduction.

Chapter 2

Methods

This is the methods section.

Chapter 3

Results

This is the results section.

Chapter 4

Discussion

This is the discussion section.

Chapter 5

Conclusion

This is the conclusion.

Chapter 13

Conclusion and Future scope

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[5] LibVNC server `http://libvncserver.sourceforge.net`

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[8] PuTTy on Wikipedia `http://en.wikipedia.org/wiki/PuTTy`

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Appendix A

Topic 1