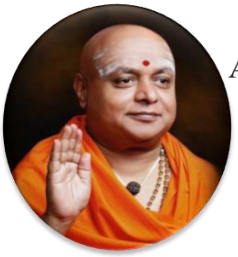
||Jai Sri Gurudev||



ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY

CHIKKAMAGALURU

DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

SEMESTER IV

TECHNICAL WRITING USING LATEX

BCSL456D

(Academic Year 2023-2024)

ABILITY ENHANCEMENT COURSE / SKILL ENHANCEMENT COURSE - IV

[As per Choice Based Credit System (CBCS) scheme]

DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

VISION

To be recognized as a center of excellence in information technology and allied areas with quality learning and research environment

MISSION

Provide intellectual & professional leadership in ethical and social areas pertaining to information in contemporary society.

Advancing the state of knowledge of information studies through research and development.

Providing a platform to discuss cutting edge technologies.

Program Educational Objectives (PEO's)

PEO1: Graduates will be able to analyse, design and provide solutions to the problems in the field of information science and engineering

PEO2: Graduates will be able to exhibit the quality of working in team and build leadership quality

PEO3: Graduates will be able to learn new technologies that will be helpful in their professional success

PEO4: To train students with good breadth of knowledge in core areas of Information Technology

Program Specific Outcomes (PSO'S)

PSO 1: Graduates will be able to understand, analyse information technology problems and provide solutions through their problem solving skills.

PSO 2: Graduates will be able to apply the skills of programming in software development.

PSO 3: Graduates will be able to work in industries in the areas of web designing, software testing, development and maintenance.

PSO 4: Should have the capability to comprehend the technological advancements in the usage of modern design tools to analyse and design subsystems/processes for a variety of applications

Course Objectives

CO1: To introduce the basic syntax and semantics of the LaTeX scripting language

CO2: To understand the presentation of tables and figures in the document

CO3: To illustrate the LaTeX syntax to represent the theorems and mathematical equations

CO3: To make use of the libraries (Tikz, algorithm) to design the diagram and algorithms in the document

Course outcome (Course Skill Set)

At the end of the course, the student will be able to:

CO1. Apply basic LaTeX command to develop simple document

CO2. Develop LaTeX script to present the tables and figures in the document

CO3. Illustrate LaTeX script to present theorems and mathematical equations in the document

CO4. Develop programs to generate the complete report with citations and a bibliography

CO5. Illustrate the use of Tikz and algorithm libraries to design graphics and algorithms in the

Document

Textbooks

- BOOK: A Short Introduction to LaTeX BY FIRUZA KARMALI (AIBARA), A book for beginners, 2019
- BOOK: Formatting Information: A Beginner's Introduction to Typesetting with LaTeX, BY PETER FLYNN, Comprehensive TeX Archive Network (2005)

Web Links

- LaTeX TUTORIAL: [https://latex-tutorial.com/tutorials/]
- LaTeX TUTORIAL: [https://www.javatpoint.com/latex]

LIST OF PROGRAMS

<table>
<tr><th>Sl.No</th><th>Name of The Program</th></tr>
<tr><td>1</td><td>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.</td></tr>
<tr><td>2</td><td>Develop a LaTeX script to create a document that displays the sample Abstract/Summary</td></tr>
<tr><td>3</td><td>Develop a LaTeX script to create a simple title page of the VTU project Report [Use suitable Logos and text formatting]</td></tr>
<tr><td>4</td><td>Develop a LaTeX script to create the Certificate Page of the Report [Use suitable commands to leave the blank spaces for user entry]</td></tr>
<tr><td>5</td><td>Develop a LaTeX script to create a document that contains the following table with proper labels.
<table>
<tr><th rowspan="2">S.No</th><th rowspan="2">USN</th><th rowspan="2">Student Name</th><th colspan="3">Marks</th></tr>
<tr><th>Subject1</th><th>Subject2</th><th>Subject3</th></tr>
<tr><td>1</td><td>4XX22XX001</td><td>Name 1</td><td>89</td><td>60</td><td>90</td></tr>
<tr><td>2</td><td>4XX22XX002</td><td>Name 2</td><td>78</td><td>45</td><td>98</td></tr>
<tr><td>3</td><td>4XX22XX003</td><td>Name 3</td><td>67</td><td>55</td><td>59</td></tr>
</table></td></tr>
<tr><td>6</td><td>Develop a LaTeX script to include the side-by-side graphics/pictures/figures in the document by using the subgraph concept</td></tr>
<tr><td>7</td><td>Develop a LaTeX script to create a document that consists of the following two mathematical equations
$$x = \frac{-b \pm \sqrt{b^2-4ac}}{2a}$$
$$= \frac{-2 \pm \sqrt{2^2-4*(1)*(-8)}}{2*1}$$
$$= \frac{-2 \pm \sqrt{4+32}}{2}$$
$$\varphi_\sigma^\lambda A_t = \sum_{\pi \in C_t} \operatorname{sgn}(\pi) \varphi_\sigma^\lambda \varphi_\pi^\lambda$$
$$= \sum_{\tau \in C_{\sigma t}} \operatorname{sgn}(\sigma^{-1}\tau\sigma) \varphi_\sigma^\lambda \varphi_{\sigma^{-1}\tau\sigma}^\lambda$$
$$= A_{\sigma t} \varphi_\sigma^\lambda$$</td></tr>
<tr><td>8</td><td>Develop a LaTeX script to demonstrate the presentation of Numbered theorems, definitions, corollaries, and lemmas in the document</td></tr>
<tr><td>9</td><td>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</td></tr>
<tr><td>10</td><td>Develop a LaTeX script to design a simple tree diagram or hierarchical structure in the document with appropriate labels using the Tikz library</td></tr>
<tr><td>11</td><td>Develop a LaTeX script to present an algorithm in the document using algorithm/algorithmic/algorithm2e library</td></tr>
</table>

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

Technical Writing using LaTeX

Your Name

April 28, 2024

Contents

List of Figures

Chapter 1

An Introduction to VTU

1.1 Visvesvaraya Technological University

Visvesvaraya Technological University (VTU), is a collegiate public state university in Belagavi, Karnataka established by the Government of Karnataka. It is one of the largest Technological Universities in India with 26 years of Tradition of excellence in Engineering & Technical Education, Research and Innovations. It came into existence in the year 1998 to cater the needs of Indian industries for trained technical manpower with practical experience and sound theoretical knowledge. The university is named after Sir M. Visvesvaraya, an Indian civil engineer, statesman and the 19th Diwan of Mysore.

Figure 1.1: VTU Logo

1.1.1 VTU Campuses

Additionally, the university has three regional centres in Bangalore, Kalaburagi and Mysore. Visvesvaraya Institute of Advanced Technology, also known as VIAT, is a research institute being constructed near Bangalore, Karnataka.

- VTU Main Campus - Belagavi

- VTU Regional Center - Bangalore
- VTU Regional Center - Mysore
- VTU Regional Center - Gulbarga
- Visvesvaraya Institute of Advanced Technology

The university also has 13 Quality Improvement Programme (QIP) centers in various affiliated colleges and 16 extension centers for offering postgraduate programs. It has around 2,305 departments recognised as research centres which are spread across its affiliated institutions in Karnataka. The Jnana Sangama, Belagavi campus and the regional and extension centres of VTU at Bangalore, Davangere, Gulbarga and Mysore offer M.Tech, MBA, MCA and PhD programs.

SCRIPT-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.

AIM: 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.

SCRIPT:

```
\documentclass[12pt,a4paper]{article}
\usepackage{lipsum}
\usepackage{geometry}
\usepackage{fancyhdr}
\usepackage{setspace}
\usepackage{times}
\linespread{1.5}
\newgeometry{top=1in,bottom=1in,right=0.75in,left=1.25in}
\begin{document}
\pagestyle{fancy}
\title{Technical Writing using \LaTeX}
\author{Winedit}
\date{March 2024}
\fancyhf{}
\fancyhead[R]{Technical Writing using \LaTeX}
\fancyfoot[R]{\thepage}
\fancyfoot[L]{Dept.of IS\&E,AIT,Chikkamagaluru.}
\maketitle
\clearpage
\section{Introduction}
\lipsum[1]\par
\lipsum[2]\par
\lipsum[3]\
\newpage
```

```
\section{Application}
\lipsum[4] \par
\lipsum[5] \par
\lipsum[6] \
\end{document}
```

Result: 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 has been successfully completed using Latex Script.

Output Sheet:

Technical Writing using LaTeX

Winedit

March 2024

1 Introduction

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.

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.

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.

2 Application

Quisque ullamcorper placerat ipsum. Cras nibh. Morbi vel justo vitae lacus tincidunt ultrices. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. In hac habitasse platea dictumst. Integer tempus convallis augue. Etiam facilisis. Nunc elementum fermentum wisi. Aenean placerat. Ut imperdiet, enim sed gravida sollicitudin, felis odio placerat quam, ac pulvinar elit purus eget enim. Nunc vitae tortor. Proin tempus nibh sit amet nisl. Vivamus quis tortor vitae risus porta vehicula.

Fusce mauris. Vestibulum luctus nibh at lectus. Sed bibendum, nulla a faucibus semper, leo velit ultricies tellus, ac venenatis arcu wisi vel nisl. Vestibulum diam. Aliquam pellentesque, augue quis sagittis posuere, turpis lacus congue quam, in hendrerit risus eros eget felis. Maecenas eget erat in sapien mattis porttitor. Vestibulum porttitor. Nulla facilisi. Sed a turpis eu lacus commodo facilisis. Morbi fringilla, wisi in dignissim interdum, justo lectus sagittis dui, et vehicula libero dui cursus dui. Mauris tempor ligula sed lacus. Duis cursus enim ut augue. Cras ac magna. Cras nulla. Nulla egestas. Curabitur a leo. Quisque egestas wisi eget nunc. Nam feugiat lacus vel est. Curabitur consectetuer.

Suspendisse vel felis. Ut lorem lorem, interdum eu, tincidunt sit amet, laoreet vitae, arcu. Aenean faucibus pede eu ante. Praesent enim elit, rutrum at, molestie non, nonummy vel, nisl. Ut lectus eros, malesuada sit amet, fermentum eu, sodales cursus, magna. Donec eu purus. Quisque vehicula, urna sed ultricies auctor, pede lorem egestas dui, et convallis elit erat sed nulla. Donec luctus. Curabitur et nunc. Aliquam dolor odio, commodo pretium, ultricies non, pharetra in, velit. Integer arcu est, nonummy in, fermentum faucibus, egestas vel, odio.

SCRIPT-2

DEVELOP A LATEX SCRIPT TO CREATE A DOCUMENT THAT DISPLAYS THE SAMPLE ABSTRACT/SUMMARY

AIM: Develop a LaTeX script to create a document that displays the sample Abstract/Summary

SCRIPT:

```
\documentclass[12pt,a4paper]{article}
\usepackage{lipsum}
\usepackage{geometry}
\usepackage{times}
\usepackage{setspace}
\usepackage{times}
\linespread{1.5}
\newgeometry{top=1in, bottom=1in, right=0.75in, left=1.25in}
\begin{document}
\pagenumbering{Roman}
% Set the page style to "fancy"...
\begin{center}
\textbf{{\huge ABSTRACT}}
\end{center}
\vspace{0.75cm}
\begin{spacing}{1.5}
\lipsum[1-2]
\end{spacing}
\end{document}
```

Result: Develop a LaTeX script to create a document that displays the sample Abstract/Summary has been successfully completed using Latex Script.

Output Sheet:

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.

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.

SCRIPT-3

DEVELOP A LATEX SCRIPT TO CREATE A SIMPLE TITLE PAGE OF THE VTU PROJECT REPORT [USE SUITABLE LOGOS AND TEXT FORMATTING]

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

SCRIPT:

```
\documentclass[12pt,a4paper]{article}
\usepackage{geometry}
\usepackage{setspace}
\usepackage{multirow}
\usepackage{times}
\usepackage{graphicx}
\usepackage{xcolor}
\usepackage{tikz}
\usetikzlibrary{calc}
\newgeometry{top=0.75in,bottom=1in,right=0.75in,left=0.75in}
\begin{document}
\begin{titlepage}
\begin{tikzpicture}[overlay,remember picture]
\draw [line width=3pt]
($ (current page.north west) + (1.5cm,-2.0cm) $) rectangle
($ (current page.south east) + (-1.5cm,1.8cm) $);
\draw [line width=1pt]
($ (current page.north west) + (1.65cm,-2.15cm) $) rectangle
($ (current page.south east) + (-1.65cm,1.95cm) $);
\end{tikzpicture}
\begin{center}
\Large{\textbf{\textcolor{blue}{VISVESVARAYA TECHNOLOGICAL UNIVERSITY}}}\\
\vspace{0.2cm}
\large{"Jnana Sangama" Belagavi - 590018}
\end{center}
\begin{center}
```

```
\includegraphics[width=3.2cm, height=3cm]{figures/vtu-logo.jpg}\\
\vspace{0.2cm}
\large \textbf{A Project Report on}\\
\vspace{0.2cm}
\textbf{PROJECT TITLE}\\
\vspace{0.2cm}
\small \textit{Submitted in partial fulfillment of the requirement for the award of the degree of}\\
\vspace{0.2cm}
\large \textbf{BACHELOR OF ENGINEERING}\\
\vspace{0.2cm}
\large \textbf{IN}\\
\vspace{0.2cm}
\large \textbf{INFORMATION SCIENCE AND ENGINEERING}\\
\vspace{0.2cm}
\large \textit{Submitted By}\\
\setlength{\tabcolsep}{4em}
\begin{tabular}{l    r}\vspace{0.1cm}
Name1&USN1\\\vspace{0.1cm}
Name2&USN2\\\vspace{0.1cm}
Name3&USN3\\\vspace{0.1cm}
Name4&USN4\\
\end{tabular}
\vspace{0.5cm}
\small \textit{Under the Guidance of}\\
\vspace{0.2cm}
\large {XYZ}\\
\vspace{0.2cm}
\small {XYZ Designation}\\
\vspace{0.2cm}
\small {Department of Information Science and Engineering}\\
\vspace{0.2cm}
\small {Adichunchanagiri Institute of Technology, Chikkamagaluru - 577102}\\
\vspace{0.2cm}
\begin{figure}[!htb]
```

```
\centering
\includegraphics[width=3.1cm, height=3cm]{figures/AIT.jpg}
\end{figure}
\small \textbf{\textcolor{blue}{DEPARTMENT OF INFORMATION SCIENCE AND
ENGINEERING}}\\
\vspace{0.2cm}
\MakeUppercase{ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY}\\\vspace{0.2cm}
(Affiliated to VTU., Accrerdited by NBA)\\
\vspace{0.2cm}
CHIKKAMAGALURU-577102, KARNATAKA\\
\vspace{0.2cm}
\small {2023-24}
\end{center}
\end{titlepage}
\end{document}
```

Result: Develop a LaTeX script to create a simple title page of the VTU project Report [Use suitable Logos and text formatting] has been successfully completed using Latex Script.

Output Sheet:

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

”Jnana Sangama” Belagavi - 590018

A Project Report on

PROJECT TITLE

Submitted in partial fulfillment of the requirement for the award of the degree of

BACHELOR OF ENGINEERING

IN

INFORMATION SCIENCE AND ENGINEERING

Submitted By

Name1	USN1
Name2	USN2
Name3	USN3
Name4	USN4

Under the Guidance of

XYZ

XYZ Designation

Department of Information Science and Engineering

Adichunchanagiri Institute of Technology, Chikkamagaluru - 577102

DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY

(Affiliated to VTU., Accrerdited by NBA)

CHIKKAMAGALURU-577102, KARNATAKA

2023-24

SCRIPT-04

Develop a Latex Script To Create The Certificate Page Of The Report [Use Suitable Commands To Leave The Blank Spaces For User Entry]

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

```
\documentclass[12pt,a4paper]{article}
\usepackage{geometry}
\usepackage{multirow}
\usepackage{setspace}
\usepackage{graphicx}
\usepackage{times}
\usepackage{xcolor}
\usepackage{setspace}
\usepackage{tikz}
\usetikzlibrary{calc}
\linespread{1.5}
\newgeometry{top=0.75in,bottom=1in,right=1in,left=1in}
\begin{document}
\begin{titlepage}
\begin{tikzpicture}[overlay,remember picture]
\draw [line width=4pt]
($ (current page.north west) + (1.5cm,-2.0cm) $)
rectangle
($ (current page.south east) + (-1.5cm,1.8cm) $);
\draw [line width=1pt]
($ (current page.north west) + (1.65cm,-2.15cm) $)
rectangle
($ (current page.south east) + (-1.65cm,1.95cm) $);
\end{tikzpicture}
\begin{center}
\Large{\textbf{\textcolor{blue}{ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY}}}\\
\vspace{0.1cm}
\normalsize{(\textcolor{blue}{Affiliated to VTU., Accrerdited by NBA), Chikkamagaluru-577102} }\\
\vspace{0.1cm}
\small{\textbf{\textcolor{green}{DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING}}}\\
\vspace{0.1cm}
\end{center}
\begin{center}
\includegraphics[width=3.3cm, height=3.5cm]{AIT.jpg}\\
\vspace{0.2cm}
\Huge{\textbf{\textcolor{red}{\underline{CERTIFICATE}}}}\\
\vspace{0.1cm}
\end{center}
This is to certify that \textbf{Your NAME (USN)} has satisfactorily completed the Project on \textbf{"Title of the Project"} in partial fulfillment for the award of degree of \textbf{Bachelor of
```

Engineering} in \textbf{Information Science and Engineering} of Visvesvaraya Technological University, Belagavi during the year \textbf{2023-2024.} It is certified that all corrections/ suggestions indicated for Internal Assessment have been incorporated in the report deposited in the departmental library. The seminar report has been approved as it satisfies the academic requirements prescribed for the said degree.\\
\begin{minipage}{.4\textwidth}
\centering
\vspace{1cm}
\rule{\linewidth}{0.05cm}\\
\textbf{Signature of the Guide}\\
Name of the Guide\\
Designation of the Guide\\
A.I.T Chikkamagaluru\\
\vspace{0.25cm}
\end{minipage}
\hspace{2cm}
\begin{minipage}{.4\textwidth}
\centering
\vspace{1cm}
\rule{\linewidth}{0.05cm}\\
\textbf{Signature of the Coordinator}\\
Name of the Coordinator\\
Designation of the Coordinator\\
A.I.T Chikkamagaluru\\
\vspace{0.25cm}
\end{minipage}\\
\vspace{1cm}
\begin{minipage}{.4\textwidth}
\vspace{1cm}
\centering
\rule{\linewidth}{0.05cm}\\
\textbf{Signature of the HOD}\\
Dr. S. Sampath, Ph.D\\
Professor \& HOD, Dept. of IS \& E\\
A.I.T Chikkamagaluru\\
\vspace{0.25cm}
\end{minipage}
\hspace{2cm}
\begin{minipage}{.4\textwidth}
\centering
\vspace{1cm}
\rule{\linewidth}{0.05cm}\\
\textbf{Signature of the Principal}\\
Dr. M A Goutham, Ph.D\\
Principal\\
A.I.T Chikkamagaluru\\
\vspace{0.25cm}
\end{minipage}
\end{titlepage}
\end{document}

ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY

(Affiliated to VTU., Accrerdited by NBA), Chikkamagaluru-577102

DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

CERTIFICATE

This is to certify that **Your NAME (USN)** has satisfactorily completed the Project on **"Title of the Project"** in partial fulfillment for the award of degree of **Bachelor of Engineering** in **Information Science and Engineering** of Visvesvaraya Technological University, Belagavi during the year **2023-2024.** It is certified that all corrections/ suggestions indicated for Internal Assessment have been incorporated in the report deposited in the departmental library. The seminar report has been approved as it satisfies the academic requirements prescribed for the said degree.

Signature of the Guide	**Signature of the Coordinator**
Name of the Guide	Name of the Coordinator
Designation of the Guide	Designation of the Coordinator
A.I.T Chikkamagaluru	A.I.T Chikkamagaluru
Signature of the HOD	**Signature of the Principal**
Dr. S. Sampath, Ph.D	Dr. M A Goutham, Ph.D
Professor & HOD, Dept. of IS & E	Principal
A.I.T Chikkamagaluru	A.I.T Chikkamagaluru

SCRIPT-5

DEVELOP A LATEX SCRIPT TO CREATE A DOCUMENT THAT CONTAINS THE FOLLOWING TABLE WITH PROPER LABELS.

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

S.No	USN	Student Name	Marks		
			Subject1	Subject2	Subject3
1	4XX22XX001	Name 1	89	60	90
2	4XX22XX002	Name 2	78	45	98
3	4XX22XX003	Name 3	67	55	59

SCRIPT:

```
\documentclass[12pt,a4paper]{article}
\usepackage{times}
\usepackage{geometry}
\usepackage{setspace}
\linespread{1.5}
\usepackage{multirow}
\usepackage{multicol}
\newgeometry{top=1in,bottom=1in,right=0.75in,left=1.25in}
\begin{document}
\begin{table}[ht]
\centering
\begin{tabular}{|c|l|c|ccc|}
\hline
\multirow{2}{*}{S.No} & \multicolumn{1}{c|}{\multirow{2}{*}{USN}} &
\multicolumn{1}{r|}{\multirow{2}{*}{Student Name}} & \multicolumn{3}{c|}{Marks} \\ \cline{4-6}
& \multicolumn{1}{c|}{} & \multicolumn{1}{r|}{} & \multicolumn{1}{l|}{Subject1} &
\multicolumn{1}{l|}{Subject2} & \multicolumn{1}{l|}{Subject3}\\ \hline
1 & 4XX22XX001 & Name 1 & \multicolumn{1}{c|}{89} & \multicolumn{1}{c|}{60} & 90 \\ \hline
2 & 4XX22XX002 & Name 2 & \multicolumn{1}{c|}{78} & \multicolumn{1}{c|}{45} & 98 \\ \hline
3 & \multicolumn{1}{c|}{4XX22XX003} & Name 3 & \multicolumn{1}{c|}{67} &
\multicolumn{1}{c|}{55} & 59 \\ \hline
```

\end{tabular}

\end{table}

\end{document}

Result: Develop a LaTeX script to create a document that contains the following table with proper labels. has been successfully completed using Latex Script.

S.No	USN	Student Name	Marks		
			Subject1	Subject2	Subject3
1	4XX22XX001	Name 1	89	60	90
2	4XX22XX002	Name 2	78	45	98
3	4XX22XX003	Name 3	67	55	59

Output Sheet:

S.No	USN	Student Name	Marks		
			Subject1	Subject2	Subject3
1	4XX22XX001	Name 1	89	60	90
2	4XX22XX002	Name 2	78	45	98
3	4XX22XX003	Name 3	67	55	59

SCRIPT-6

DEVELOP A LATEX SCRIPT TO INCLUDE THE SIDE-BY-SIDE GRAPHICS/PICTURES/FIGURES IN THE DOCUMENT BY USING THE SUBGRAPH CONCEPT

AIM: Develop a LaTeX script to include the side-by-side graphics/pictures/figures in the document by using the sub graph concept

SCRIPT:

```
\documentclass[12pt,a4paper]{article}
\usepackage{times}
\usepackage{geometry}
\usepackage{setspace}
\linespread{1.5}
\usepackage{subcaption}
\usepackage{graphicx}
\newgeometry{top=1in,bottom=1in,right=0.75in,left=1.25in}
\begin{document}
\begin{figure*}[ht!]
\centering
\begin{subfigure}[t]{0.3\textwidth}
\centering
\includegraphics[width=3.3cm, height=3.5cm]{figures/AIT.jpg}
\caption{AIT}
\end{subfigure}%
~
\begin{subfigure}[t]{0.3\textwidth}
\centering
\includegraphics[width=3.3cm, height=3.5cm]{figures/vtu-logo.jpg}
\caption{VTU}%
\end{subfigure}
~
\begin{subfigure}[t]{0.3\textwidth}
\centering
```

```
\includegraphics[width=3.3cm, height=3.5cm]{figures/AIT.jpg}
\caption{AIT}
\end{subfigure}%
\caption{LaTeX script to include the side-by-side graphics/pictures/figures in the document by using the subgraph concept}
\end{figure*}
\end{document}
```

Result: Develop a LaTeX script to include the side-by-side graphics/pictures/figures in the document by using the sub graph concept has been successfully completed using Latex Script.

Output Sheet:

(a) AIT

(b) VTU

(c) AIT

Figure 1: LaTeX script to include the side-by-side graphics/pictures/figures in the document by using the subgraph concept

SCRIPT-7

DEVELOP A LATEX SCRIPT TO CREATE A DOCUMENT THAT CONSISTS OF THE FOLLOWING TWO MATHEMATICAL EQUATIONS

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

$$x = \frac{-b \pm \sqrt{b^2-4ac}}{2a}$$

$$= \frac{-2 \pm \sqrt{2^2-4*(1)*(-8)}}{2*1}$$

$$= \frac{-2 \pm \sqrt{4+32}}{2}$$

$$\varphi_\sigma^\lambda A_t = \sum_{\pi \in C_t} \operatorname{sgn}(\pi) \varphi_\sigma^\lambda \varphi_\pi^\lambda$$

$$= \sum_{\tau \in C_{\sigma t}} \operatorname{sgn}(\sigma^{-1}\tau\sigma) \varphi_\sigma^\lambda \varphi_{\sigma^{-1}\tau\sigma}^\lambda$$

$$= A_{\sigma t} \varphi_\sigma^\lambda$$

SCRIPT:

```
\documentclass[12pt,a4paper]{article}
\usepackage{amsmath}
\usepackage{times}
\usepackage{geometry}
\usepackage{setspace}
\linespread{1.5}
\newgeometry{top=1in,bottom=1in,right=0.75in,left=1.25in}
\begin{document}
\begin{equation*}
\begin{split}
x & =\frac{-b\pm\sqrt{b^{2}-4ac}}{2a}\\\\
& =\frac{-2\pm\sqrt{2^{2}-4*1*(-8)}}{2*1}\\\\
& =\frac{-2\pm\sqrt{4+32}}{2}\\\\
\end{split}
\end{equation*}\\
\begin{equation*}
\begin{split}
& \varphi^\lambda_{\sigma}A_{t}=\sum_{\Pi\epsilon
c_{t}}sgn(\pi)\varphi^\lambda_{\sigma}\varphi^\lambda_{\pi} \\\\
```

```
& =\sum_{\Pi\epsilon c_{t}}sgn(\sigma^{-
1}\tau\sigma)\varphi^\lambda_{\sigma}\varphi^\lambda_{\sigma^{-1\tau\sigma}}\\\\
& =A_{\sigma t}\varphi^\lambda_{\sigma}\\\\
\end{split}
\end{equation*}
\end{document}
```

Result: Develop a LaTeX script to create a document that consists of the following two mathematical equations has been successfully completed using Latex Script.

$$x = \frac{-b \pm \sqrt{b^2-4ac}}{2a}$$

$$= \frac{-2 \pm \sqrt{2^2-4*(1)*(-8)}}{2*1}$$

$$= \frac{-2 \pm \sqrt{4+32}}{2}$$

$$\varphi^\lambda_\sigma A_t = \sum_{\pi \in C_t} \operatorname{sgn}(\pi)\varphi^\lambda_\sigma \varphi^\lambda_\pi$$

$$= \sum_{\tau \in C_{\sigma t}} \operatorname{sgn}(\sigma^{-1}\tau\sigma)\varphi^\lambda_\sigma \varphi^\lambda_{\sigma^{-1}\tau\sigma}$$

$$= A_{\sigma t}\varphi^\lambda_\sigma$$

Output Sheet:

SCRIPT-8

DEVELOP A LATEX SCRIPT TO DEMONSTRATE THE PRESENTATION OF NUMBERED THEOREMS, DEFINITIONS, COROLLARIES, AND LEMMAS IN THE DOCUMENT

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

SCRIPT:

```
\documentclass[12pt, a4paper]{article}
\usepackage{times}
\usepackage{geometry}
\usepackage{setspace}
\linespread{1.5}
\newtheorem{theorem}{Theorem}[section]
\newtheorem{corollary}{Corollary}[theorem]
\newtheorem{lemma}[theorem]{Lemma}
\geometry{top=1in, bottom=1in, right=0.75in, left=1.25in}
\begin{document}
\section{Numbered theorems, definitions, corollaries,
and lemmas}
Theorems can easily be defined:
\begin{theorem}
Let \(f\) be a function whose derivative exists in every point, then \(f\) is
a continuous function.
\end{theorem}
\begin{theorem}[Pythagorean theorem]
\label{pythagorean}
This is a theorem about right triangles and can be summarised in the next
equation
\[ x^2 + y^2 = z^2 \]
\end{theorem}
And a consequence of theorem \ref{pythagorean} is the statement in the next
corollary.
\begin{corollary}
```

```
There's no right rectangle whose sides measure 3cm, 4cm, and 6cm.
\end{corollary}
\begin{corollary}
There's no right rectangle whose sides measure 3cm, 4cm, and 6cm.
\end{corollary}
You can reference theorems such as \ref{pythagorean} when a label is assigned.
\begin{lemma}
Given two line segments whose lengths are \(a\) and \(b\) respectively there is a
real number \(r\) such that \(b=ra\).
\end{lemma}
\begin{lemma}
Given two line segments whose lengths are \(a\) and \(b\) respectively there is a
real number \(r\) such that \(b=ra\).
\end{lemma}
\end{document}
```

Result: Develop a LaTeX script to demonstrate the presentation of Numbered theorems, definitions, corollaries, and lemmas in the document has been successfully completed using Latex Script.

Output Sheet:

1 Numbered theorems, definitions, corollaries, and lemmas

Theorems can easily be defined:

Theorem 1.1 *Let f be a function whose derivative exists in every point, then f is a continuous function.*

Theorem 1.2 (Pythagorean theorem) *This is a theorem about right triangles and can be summarised in the next equation*

$$x^2 + y^2 = z^2$$

And a consequence of theorem 1.2 is the statement in the next corollary.

Corollary 1.2.1 *There's no right rectangle whose sides measure 3cm, 4cm, and 6cm.*

Corollary 1.2.2 *There's no right rectangle whose sides measure 3cm, 4cm, and 6cm.*

You can reference theorems such as 1.2 when a label is assigned.

Lemma 1.3 *Given two line segments whose lengths are a and b respectively there is a real number r such that $b = ra$.*

Lemma 1.4 *Given two line segments whose lengths are a and b respectively there is a real number r such that $b = ra$.*

SCRIPT- 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

AIM: 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

SCRIPT:

```
\documentclass[12pt,a4paper]{article}
\usepackage{times}
\usepackage{geometry}
\usepackage{setspace}
\linespread{1.2}
\newgeometry{top=1in,bottom=1in,right=0.75in,left=1.25in}
\usepackage[backend=biber,style=alphabetic,]{biblatex}
\title{A bibLaTeX example}
\addbibresource{sample.bib}
\begin{document}
\section{First section}
Items that are cited: \textit{The \LaTeX\ Companion} book \cite{latexcompanion} together with Einstein's journal paper \cite{einstein} and Dirac's book \cite{dirac}---which are physics-related items. Next, citing two of Knuth's books: \textit{Fundamental Algorithms} \cite{knuth-fa} and \textit{The Art of Computer Programming} \cite{knuth-acp}\par
Douglas,\cite{Lavanya} together works on the main \cite{knuthwebsite} with \cite{Vaibhav} in this section work entitled to \cite{ctan} the maximum reference from \cite{Douglas}
\medskip
\printbibliography
\end{document}
```

SAMPLE.BIB:

```
@article{einstein,
author =       "Albert Einstein",
title =        "{Zur Elektrodynamik bewegter K{\"o}rper}. ({German})
[{On} the electrodynamics of moving bodies]",
```

```
journal =     "Annalen der Physik",
volume =      "322",
number =      "10",
pages =       "891--921",
year =        "1905",
DOI =         "http://dx.doi.org/10.1002/andp.19053221004",
keywords =    "physics"
}
@article{Douglas,
author =      "Douglas W. Jones",
title =       "{Early Requirements for Mechanical Voting Systems K{\"o}rper}. ({German})
[{On} the electrodynamics of moving bodies]",
journal =     "Requirements Engineering for E-voting Systems",
volume =      "322",
number =      "10",
pages =       "891--921",
year =        "1905",
DOI =         "http://dx.doi.org/10.1002/andp.19053221004",
keywords =    "physics"
}
@book{dirac,
title={The Principles of Quantum Mechanics},
author={Paul Adrien Maurice Dirac},
isbn={9780198520115},
series={International series of monographs on physics},
year={1981},
publisher={Clarendon Press},
keywords = {physics}
}
@book{latexcompanion,
author    = "Michel Goossens and Frank Mittelbach and Alexander Samarin",
title     = "The \LaTeX\ Companion",
year      = "1993",
publisher = "Addison-Wesley",
```

```
address   = "Reading, Massachusetts",
keywords  = "latex"
}
@online{knuthwebsite,
author    = "Donald Knuth",
title     = "Knuth: Computers and Typesetting",
url       = "http://www-cs-faculty.stanford.edu/~uno/abcde.html",
keywords  = "latex,knuth"
}
@inbook{knuth-fa,
author = "Donald E. Knuth",
title = "Fundamental Algorithms",
publisher = "Addison-Wesley",
year = "1973",
chapter = "1.2",
keywords  = "knuth,programming"
}
@book{knuth-acp,
author = "Donald E. Knuth",
publisher = "Addison-Wesley",
title = "The Art of Computer Programming",
series = "Four volumes",
year = "1968",
note = "Seven volumes planned",
keywords  = "knuth,programming"
}
@article{ctan,
author  = "George D. Greenwade",
title   = "The {C}omprehensive {T}ex {A}rchive {N}etwork ({CTAN})",
year    = "1993",
journal = "TUGBoat",
volume  = "14",
number  = "3",
pages   = "345--350",
```

```
keywords  = "latex"
}
@article{Vaibhav,
author  = "Vaibhav Bhatia, Pawan Whig",
title   = "The {C}omprehensive {T}ex {A}rchive {N}etwork ({CTAN})",
year    = "1993",
journal = "International Journal of Intelligent Systems and Applications",
volume  = "14",
number  = "3",
pages   = "352--358",
keywords  = "latex,Vaibhav"
}
@article{Lavanya,
author  = "S.Lavanya",
title   = "The {C}omprehensive {T}ex {A}rchive {N}etwork ({CTAN})",
year    = "1993",
journal = "International Journal of Intelligent Systems and Applications",
volume  = "14",
number  = "3",
pages   = "342--351",
keywords  = "latex,Lavanya"
}
```

Result: 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 has been successfully completed using Latex Script.

Output Sheet:

1 First section

Items that are cited: *The LaTeX Companion* book [GMS93] together with Einstein's journal paper [Ein05] and Dirac's book [Dir81]—which are physics-related items. Next, citing two of Knuth's books: *Fundamental Algorithms* [Knu73] and *The Art of Computer Programming* [Knu68]

Douglas,[SLa93] together works on the main [Knu] with [Vai93] in this section work entitled to [Gre93] the maximum reference from [Jon05]

References

[Dir81] Paul Adrien Maurice Dirac. *The Principles of Quantum Mechanics*. International series of monographs on physics. Clarendon Press, 1981. ISBN: 9780198520115.

[Ein05] Albert Einstein. "Zur Elektrodynamik bewegter Körper. (German) [On the electrodynamics of moving bodies]". In: *Annalen der Physik* 322.10 (1905), pp. 891–921. DOI: http://dx.doi.org/10.1002/andp.19053221004.

[GMS93] Michel Goossens, Frank Mittelbach, and Alexander Samarin. *The LaTeX Companion*. Reading, Massachusetts: Addison-Wesley, 1993.

[Gre93] George D. Greenwade. "The Comprehensive Tex Archive Network (CTAN)". In: *TUGBoat* 14.3 (1993), pp. 345–350.

[Jon05] Douglas W. Jones. "Early Requirements for Mechanical Voting Systems Körper. (German) [On the electrodynamics of moving bodies]". In: *Requirements Engineering for E-voting Systems* 322.10 (1905), pp. 891–921. DOI: http://dx.doi.org/10.1002/andp.19053221004.

[Knu] Donald Knuth. *Knuth: Computers and Typesetting*. URL: http://www-cs-faculty.stanford.edu/~uno/abcde.html.

[Knu68] Donald E. Knuth. *The Art of Computer Programming*. Four volumes. Seven volumes planned. Addison-Wesley, 1968.

[Knu73] Donald E. Knuth. "Fundamental Algorithms". In: Addison-Wesley, 1973. Chap. 1.2.

[SLa93] S.Lavanya. "The Comprehensive Tex Archive Network (CTAN)". In: *International Journal of Intelligent Systems and Applications* 14.3 (1993), pp. 342–351.

[Vai93] Pawan Whig Vaibhav Bhatia. "The Comprehensive Tex Archive Network (CTAN)". In: *International Journal of Intelligent Systems and Applications* 14.3 (1993), pp. 352–358.

SCRIPT-10

DEVELOP A LATEX SCRIPT TO DESIGN A SIMPLE TREE DIAGRAM OR HIERARCHICAL STRUCTURE IN THE DOCUMENT WITH APPROPRIATE LABELS USING THE TIKZ LIBRARY

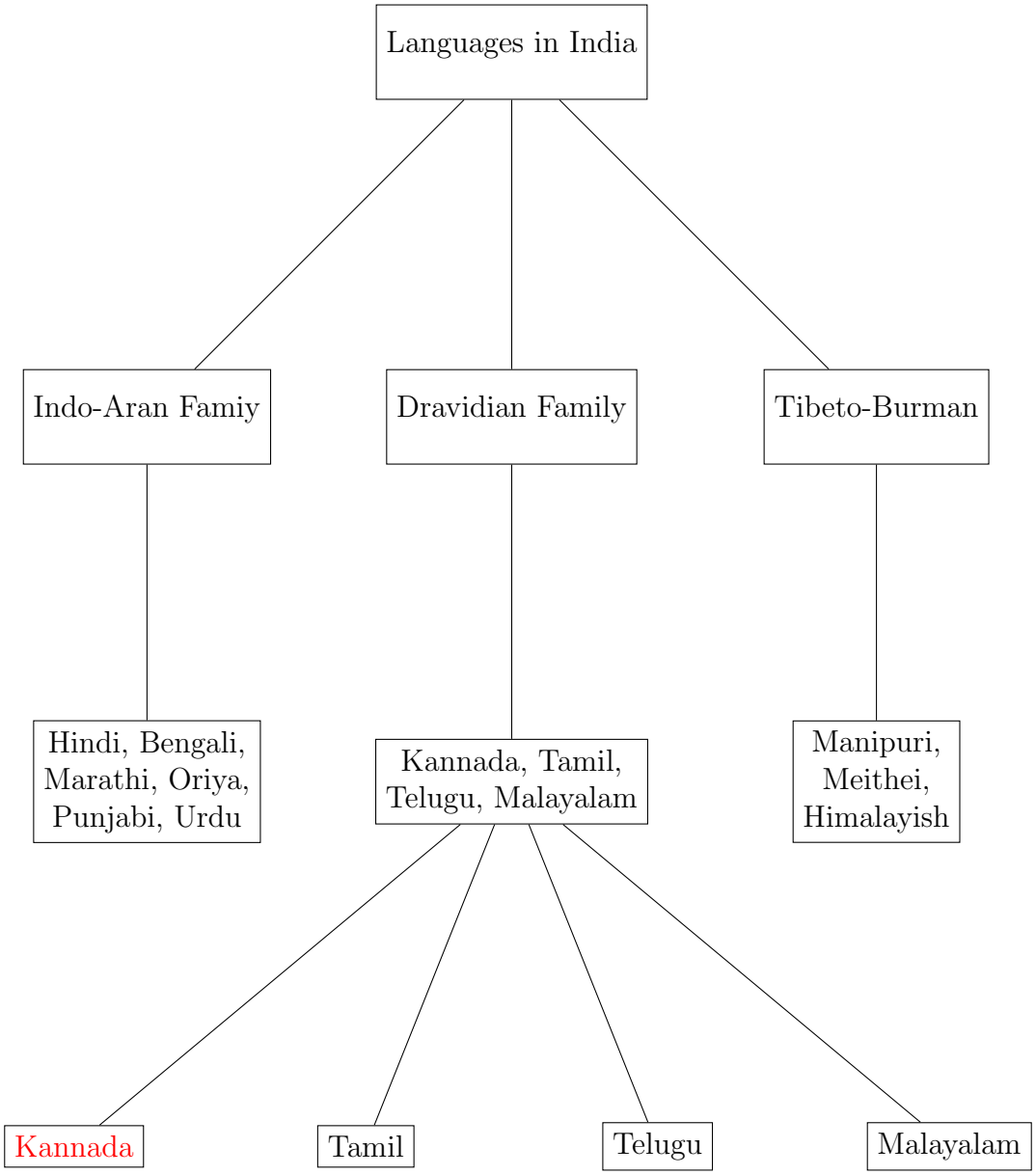
AIM: Develop a LaTeX script to design a simple tree diagram or hierarchical structure in the document with appropriate labels using the Tikz library

SCRIPT:

```
\documentclass[12pt, a4paper]{article}
\usepackage{xcolor}
\usepackage{geometry}
\usepackage{tikz}
\begin{document}
\centering
\begin{tikzpicture}
\tikzset{
solid node/.style = {rectangle,draw,align=center},
level 1/.style = {level distance=50mm,sibling distance=50mm},
level 2/.style = {level distance=50mm,sibling distance=50mm},
level 3/.style = {level distance=50mm,sibling distance=40mm},
}
\node[solid node]{\\Languages in India\\}
child{node[solid node]{\\Indo-Aran Famiy\\}
child{node[solid node]{Hindi, Bengali,\\Marathi, Oriya,\\Punjabi, Urdu}}}
child{node[solid node]{\\Dravidian Family\\}
child{node[solid node]{Kannada, Tamil,\\Telugu, Malayalam}
child{node[solid node]{\textcolor{red}{Kannada}}}
child{node[solid node]{Tamil}}
child{node[solid node]{Telugu}}
child{node[solid node]{Malayalam}}}}
child{node[solid node]{\\Tibeto-Burman\\}
child{node[solid node]{Manipuri,\\ Meithei,\\Himalayish}}};
\end{tikzpicture}
\end{document}
```

Result: Develop a LaTeX script to design a simple tree diagram or hierarchical structure in the document with appropriate labels using the Tikz library has been successfully completed using Latex Script.

Output Sheet:


Languages in India
Indo-Aran Famiy
Dravidian Family
Tibeto-Burman
Hindi, Bengali, Marathi, Oriya, Punjabi, Urdu
Kannada, Tamil, Telugu, Malayalam
Manipuri, Meithei, Himalayish
Kannada
Tamil
Telugu
Malayalam

SCRIPT-11

DEVELOP A LATEX SCRIPT TO PRESENT AN ALGORITHM IN THE DOCUMENT USING ALGORITHM/ALGORITHMIC/ALGORITHM2E LIBRARY

AIM: Develop a LaTeX script to present an algorithm in the document using algorithm/algorithmic/algorithm2e library

SCRIPT:

```
\documentclass[12pt, a4paper]{article}
\usepackage{geometry}
\usepackage{algorithm2e}
\usepackage{algpseudocode}
\newgeometry{top=1in,bottom=1in,right=0.75in,left=1in}
\linespread{1.5}
\begin{document}
\RestyleAlgo{ruled}
\begin{algorithm}
\caption{Using algorithm/algorithmic/algorithm2e library}
\KwData{$n \geq 0$}
\KwResult{$y = x^n$}
$y \gets 1$\;
$X \gets x$\;
$N \gets n$\;
\While{$N \neq 0$}{
\eIf{$N$ is even}{
$X \gets X \times X$\;
$N \gets \frac{N}{2} $
}{\If{$N$ is odd}{
$y \gets y \times X$\;
$N \gets N - 1$\;
}
}
}
\end{algorithm}
\end{document}
```

Result: Develop a LaTeX script to present an algorithm in the document using algorithm/algorithmic/algorithm2e Library has been successfully completed using Latex Script.

Output Sheet:

Algorithm 1: Using algorithm/algorithmic/algorithm2e library

Data: $n \geq 0$

Result: $y = x^n$

$y \leftarrow 1$;

$X \leftarrow x$;

$N \leftarrow n$;

while $N \neq 0$ **do**

  if N *is even* **then**

    $X \leftarrow X \times X$;

    $N \leftarrow \frac{N}{2}$

  else

    if N *is odd* **then**

      $y \leftarrow y \times X$;

      $N \leftarrow N - 1$;

    end

  end

end

SCRIPT-12

DEVELOP A LATEX SCRIPT TO CREATE A SIMPLE REPORT AND ARTICLE BY USING SUITABLE COMMANDS AND FORMATS OF USER CHOICE

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

```
\documentclass[12pt,a4paper]{report}
\usepackage{enumitem}
\usepackage{graphicx}
\usepackage{lipsum}
\usepackage{geometry}
\usepackage{fancyhdr}
\usepackage{times}
\usepackage{setspace}
\usepackage{times}
\linespread{1.5}
\pagestyle{fancy}
\fancyhead{}
\fancyfoot{}
\fancyhead[R]{Technical Writing using \LaTeX}
\fancyfoot[R]{\thepage}
\fancyfoot[L]{Dept.of IS\&E,AIT,Chikkamagaluru.}
\renewcommand{\headrulewidth}{1pt}
\renewcommand{\footrulewidth}{1pt}
\AtBeginDocument{\fancyhfoffset{0pt}}
\newgeometry{top=1in, bottom=1in, right=0.75in, left=1.25in}
\title{Technical Writing using LaTeX}
\date{\today}
\author{Your Name}
\pagenumbering{roman}
\begin{document}
\maketitle
\tableofcontents
\clearpage
```

```
\addcontentsline{toc}{chapter}{List of Figures}
\listoffigures
\clearpage
\pagenumbering{arabic}
\chapter{An Introduction to VTU}
\section{Visvesvaraya Technological University}
```

Visvesvaraya Technological University (VTU), is a collegiate public state university in Belagavi, Karnataka established by the Government of Karnataka. It is one of the largest Technological Universities in India with 26 years of Tradition of excellence in Engineering \& Technical Education, Research and Innovations. It came into existence in the year 1998 to cater the needs of Indian industries for trained technical manpower with practical experience and sound theoretical knowledge. The university is named after Sir M. Visvesvaraya, an Indian civil engineer, statesman and the 19th Diwan of Mysore.

```
\begin{figure}[h]
\centering
\includegraphics[width=3.8cm, height=4cm]{figures/vtu-logo.jpg}
\caption{VTU Logo}
\end{figure}
\subsection{VTU Campuses}
```

Additionally, the university has three regional centres in Bangalore, Kalaburagi and Mysore. Visvesvaraya Institute of Advanced Technology, also known as VIAT, is a research institute being constructed near Bangalore, Karnataka.

```
\begin{itemize}
\item VTU Main Campus - Belagavi
\item VTU Regional Center - Bangalore
\item VTU Regional Center - Mysore
\item VTU Regional Center - Gulbarga
\item Visvesvaraya Institute of Advanced Technology
\end{itemize}
```

The university also has 13 Quality Improvement Programme (QIP) centers in various affiliated colleges and 16 extension centers for offering postgraduate programs. It has around 2,305 departments recognised as research centres which are spread across its affiliated institutions in Karnataka. The Jnana Sangama, Belagavi campus and the regional and extension centres of VTU at Bangalore, Davangere, Gulbarga and Mysore offer M.Tech, MBA, MCA and PhD programs.

```
\chapter{An Introduction to AIT}
```

We recognize that you are about to embark on one of the most exciting times of your life. We provide opportunities, you choose how to take advantage of them, and we support you along the way.

```
\section{Adichunchanagiri Institute of Technology}
```

Adichunchanagiri Institute of Technology (AIT) was established in the year 1980 at Chikkamagaluru, with the blessings of revered Jagadguru Padmabhushana Sri Sri Sri Dr. Balagangadharanatha Maha Swamiji, pontiff, of Sri Adichunchanagiri Maha Samsthana Math.

```
\begin{figure}[h]
\centering
\includegraphics[width=4.7cm, height=5cm]{figures/AIT.jpg}
\caption{AIT Logo}
\end{figure}
```

The Adichunchanagiri Institute of Technology is affiliated to Visvesvaraya Technological University, Belagavi and Recognized by All India Council for Technical Education, New Delhi. The Institute is Accredited by the National Assessment and Accreditation Council (NAAC) with “A” grade also the institute was Accredited twice by National Board of Accreditation (NBA).

```
\section{Departments in AIT}
```

The Adichunchanagiri Institute of Technology is affiliated to Visvesvaraya Technological University, its have 10 Different Departments that are.

```
\begin{enumerate}
\item Department of Civil Engineering
\item Department of Computer Science and Engineering
\item Department of Electronics and Communication Engineering
\item Department of Electrical and Electronics Engineering
\item Department of Information Science \& Engineering
\item Department of Mechanical Engineering
\item Department of Artificial Intelligence and Machine Learning
\item Department of Computer Science and Engineering (Data Science)
\item PG Department of Management Studies (MBA)
\item Department of Basic Science
\begin{enumerate}
\item Department of Mathematics
\item Department of Engineering Chemistry
```

```
\item Physics
\end{enumerate}
\end{enumerate}
```

The mission of Adichunchanagiri Institute of Technology is to provide research-oriented, high-quality education for undergraduate, and graduate students in both engineering and business management and to contribute to the solution of problems through excellence and distinction in teaching, research, and service.The institute strives to impart an appreciation and broad understanding of the human experience throughout the world and the ages.

```
\chapter{An Introduction to IS\&E}
\vspace{-0.5cm}
```

Founded in 1999-2000 with an initial intake of 60 students, our department has grown into a center of academic excellence and innovation. Our faculty, comprised of highly qualified educators and accomplished research scholars, has consistently guided our students to academic success, with numerous VTU ranks to our credit.

```
\section{Information Science \& Engineering}
```

However, our commitment goes beyond the classroom, as we provide comprehensive career guidance and maintain an outstanding placement record, ensuring our students are well-prepared for the job market.\par

To bridge the gap between academia and industry, we regularly organize technical talks, seminars, short-term courses, hands-on training, and workshops. These activities not only enhance our students' practical skills but also keep our faculty members up-to-date with industry developments.\par

In essence, our department is a dynamic community dedicated to nurturing talent, fostering academic excellence, and equipping our students with the skills and knowledge to thrive in a rapidly evolving technological landscape

```
\textbf{VISION:} To be recognized as a center of excellence in information technology and allied areas with quality learning and research environment\\
\textbf{MISSION:}
\begin{itemize}
\item Provide intellectual \& professional leadership in ethical and social areas pertaining to information in contemporary society.
\item Advancing the state of knowledge of information studies through research and development.
\item Providing a platform to discuss cutting edge technologies.
\end{itemize}
```

```
\section{Program Specific Outcomes (PSO'S)}
\begin{itemize}
\item \textbf{PSO 1:} Graduates will be able to understand, analyze information technology problems and provide solutions through their problem solving skills.
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\item \textbf{PSO 4:} Should have the capability to comprehend the technological advancements in the usage of modern design tools to analyze and design subsystems/processes for a variety of applications
\end{itemize}
\section{Why Study Here?}
The Department of Information Science takes the student experience and the success of our alumni seriously. We regularly survey in an effort to assess the effectiveness of our programs and student services. Below are reports detailing the results of these surveys.\\
Learn from class-leading faculty. Conduct world-changing research. Prepare for a more fulfilling career. At AIT's IS Department, our flexible, nationally accredited programs make it easier for you to achieve your professional goals.\\
Every student's academic journey is unique. How each chooses to take advantage of the opportunities to learn, grow, and flourish varies. Our alumni are passionate life-long learners and driven leaders, making a difference in the information field.
\end{document}
```

Result: Develop a LaTeX script to create a simple report and article by using suitable commands and formats of user choice. has been successfully completed using Latex Script.

Output Sheet:

Technical Writing using LaTeX

Your Name

April 28, 2024

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Chapter 1

An Introduction to VTU

1.1 Visvesvaraya Technological University

Visvesvaraya Technological University (VTU), is a collegiate public state university in Belagavi, Karnataka established by the Government of Karnataka. It is one of the largest Technological Universities in India with 26 years of Tradition of excellence in Engineering & Technical Education, Research and Innovations. It came into existence in the year 1998 to cater the needs of Indian industries for trained technical manpower with practical experience and sound theoretical knowledge. The university is named after Sir M. Visvesvaraya, an Indian civil engineer, statesman and the 19th Diwan of Mysore.

Figure 1.1: VTU Logo

1.1.1 VTU Campuses

Additionally, the university has three regional centres in Bangalore, Kalaburagi and Mysore. Visvesvaraya Institute of Advanced Technology, also known as VIAT, is a research institute being constructed near Bangalore, Karnataka.

- VTU Main Campus - Belagavi

- VTU Regional Center - Bangalore
- VTU Regional Center - Mysore
- VTU Regional Center - Gulbarga
- Visvesvaraya Institute of Advanced Technology

The university also has 13 Quality Improvement Programme (QIP) centers in various affiliated colleges and 16 extension centers for offering postgraduate programs. It has around 2,305 departments recognised as research centres which are spread across its affiliated institutions in Karnataka. The Jnana Sangama, Belagavi campus and the regional and extension centres of VTU at Bangalore, Davangere, Gulbarga and Mysore offer M.Tech, MBA, MCA and PhD programs.

Chapter 2

An Introduction to AIT

2.1 Adichunchanagiri Institute of Technology

We recognize that you are about to embark on one of the most exciting times of your life. We provide opportunities, you choose how to take advantage of them, and we support you along the way.

Adichnchanagiri Institute of Technology (AIT) was established in the year 1980 at Chikkamagaluru, with the blessings of revered Jagadguru Padmabhushana Sri Sri Sri Dr. Balagangadharanatha Maha Swamiji, pontiff, of Sri Adichunchanagiri Maha Samsthana Math. The

Figure 2.1: AIT Logo

Adichunchanagiri Institute of Technology is affiliated to Visvesvaraya Technological University, Belagavi and Recognized by All India Council for Technical Education, New Delhi. The Institute is Accredited by the National Assessment and Accreditation Council (NAAC) with "A" grade also the institute was Accredited twice by National Board of Accreditation (NBA).

2.2 Departments in AIT

The Adichunchanagiri Institute of Technology is affiliated to Visvesvaraya Technological University, its have 10 Different Departments that are.

1. Department of Civil Engineering
2. Department of Computer Science and Engineering
3. Department of Electronics and Communication Engineering
4. Department of Electrical and Electronics Engineering
5. Department of Information Science & Engineering
6. Department of Mechanical Engineering
7. Department of Artificial Intelligence and Machine Learning
8. Department of Computer Science and Engineering (Data Science)
9. PG Department of Management Studies (MBA)
10. Department of Basic Science
    (a) Department of Mathematics
    (b) Department of Engineering Chemistry
    (c) Physics

The mission of Adichunchanagiri Institute of Technology is to provide research-oriented, high-quality education for undergraduate, and graduate students in both engineering and business management and to contribute to the solution of problems through excellence and distinction in teaching, research, and service.The institute strives to impart an appreciation and broad understanding of the human experience throughout the world and the ages.

Chapter 3

An Introduction to IS&E

3.1 Information Science & Engineering

Founded in 1999-2000 with an initial intake of 60 students, our department has grown into a center of academic excellence and innovation. Our faculty, comprised of highly qualified educators and accomplished research scholars, has consistently guided our students to academic success, with numerous VTU ranks to our credit.

However, our commitment goes beyond the classroom, as we provide comprehensive career guidance and maintain an outstanding placement record, ensuring our students are well-prepared for the job market.

To bridge the gap between academia and industry, we regularly organize technical talks, seminars, short-term courses, hands-on training, and workshops. These activities not only enhance our students' practical skills but also keep our faculty members up-to-date with industry developments.

In essence, our department is a dynamic community dedicated to nurturing talent, fostering academic excellence, and equipping our students with the skills and knowledge to thrive in a rapidly evolving technological landscape **VISION:** To be recognized as a center of excellence in information technology and allied areas with quality learning and research environment
MISSION:

- Provide intellectual & professional leadership in ethical and social areas pertaining to information in contemporary society.
- Advancing the state of knowledge of information studies through research and development.

- Providing a platform to discuss cutting edge technologies.

3.2 Program Specific Outcomes (PSO'S)

- **PSO 1:** Graduates will be able to understand, analyze information technology problems and provide solutions through their problem solving skills.
- **PSO 2:** Graduates will be able to apply the skills of programming in software development.
- **PSO 3:** Graduates will be able to work in industries in the areas of web designing, software testing, development and maintenance.
- **PSO 4:** Should have the capability to comprehend the technological advancements in the usage of modern design tools to analyze and design subsystems/processes for a variety of applications

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