📌 LaTeX Code for a Formal Notice

```
\documentclass[12pt]{article}

\usepackage[utf8]{inputenc}

\usepackage{geometry}

\usepackage{graphicx}

\usepackage{setspace}

\usepackage{titling}

\usepackage{titlesec}

\geometry{a4paper, top=1in, bottom=1in, left=1in, right=1in}

\setstretch{1.2}

\pagestyle{empty}


\begin{document}


% ----------- Logo and Header (Optional) ------------

\begin{center}

   \includegraphics[width=2cm]{logo.png} \\  % Optional: Comment out if no logo

   \textbf{\Large XYZ College of Engineering} \\

   \textit{Affiliated to Anna University, Chennai} \\

   \textbf{NOTICE}

   \vspace{0.5em}

   \hrule

\end{center}


\vspace{1em}


% ----------- Date and Title -----------------------

\noindent
```

```
\textbf{Date:} 18 June 2025 \\

\textbf{Subject:} \underline{Seminar on Embedded Systems}


\vspace{1em}


% ----------- Body of the Notice -------------------

This is to inform all students of the \textbf{Electronics and Communication Engineering Department} that a seminar on \textbf{“Recent Trends in Embedded Systems”} will be held on:


\begin{itemize}

   \item \textbf{Date:} 25 June 2025 (Wednesday)

   \item \textbf{Time:} 10:00 AM to 1:00 PM

   \item \textbf{Venue:} Main Auditorium

   \item \textbf{Speaker:} Dr. S. Ramakrishnan, Senior Scientist, DRDO

\end{itemize}


All students are required to attend the seminar in formal attire and carry their ID cards.


\vspace{1em}

For any queries, contact the seminar coordinator, Mr. Rajesh Kumar (Lecturer, ECE Department).


\vspace{2em}


% ----------- Signature ----------------------------

\noindent

\begin{flushright}

\textbf{Dr. A. Meenakshi} \\
```

```
Head of Department \\

ECE Department

\end{flushright}


\end{document}
```

logo.png

XYZ College of Engineering

Affiliated to Anna University, Chennai

NOTICE

Date: 18 June 2025
Subject: Seminar on Embedded Systems

This is to inform all students of the **Electronics and Communication Engineering Department** that a seminar on **"Recent Trends in Embedded Systems"** will be held on:

- **Date:** 25 June 2025 (Wednesday)
- **Time:** 10:00 AM to 1:00 PM
- **Venue:** Main Auditorium
- **Speaker:** Dr. S. Ramakrishnan, Senior Scientist, DRDO

All students are required to attend the seminar in formal attire and carry their ID cards.

For any queries, contact the seminar coordinator, Mr. Rajesh Kumar (Lecturer, ECE Department).

Dr. A. Meenakshi
Head of Department
ECE Department

Colored Notice Format in LaTeX

```
\documentclass[12pt]{article}
\usepackage[utf8]{inputenc}
\usepackage[a4paper,margin=1in]{geometry}
\usepackage{tcolorbox}
\usepackage{xcolor}
\usepackage{graphicx}
\usepackage{lipsum}
\usepackage{setspace}
\usepackage{titling}
\setstretch{1.2}
\pagestyle{empty}

%---------- Define Colors ----------
\definecolor{noticetitlebg}{RGB}{0,102,204}
\definecolor{noticebodybg}{RGB}{232,241,255}
\definecolor{noticetext}{RGB}{0,0,0}

\begin{document}

%---------- Institution Header ----------
\begin{center}
   \includegraphics[width=2.5cm]{logo.png} \\ % Optional: comment if no logo
   \textbf{\LARGE XYZ College of Engineering} \\
   \textit{Affiliated to Anna University, Chennai} \\
   \textbf{Department of Electronics and Communication Engineering}
\end{center}
```

```
\vspace{0.5em}

%---------- Notice Box Starts ----------
\begin{tcolorbox}[colback=noticebodybg!100,
        colframe=noticetitlebg,
        coltitle=white,
        title=\centering \textbf{NOTICE},
        fonttitle=\bfseries\Large,
        boxrule=0.8mm,
        width=\textwidth]

\textbf{Date:} 18 June 2025 \\
\textbf{Subject:} \underline{Seminar on Embedded Systems}

\vspace{1em}

This is to inform all students of the \textbf{ECE Department} that a seminar on
\textbf{“Recent Trends in Embedded Systems”} is scheduled as follows:

\begin{itemize}
  \item \textbf{Date:} 25 June 2025 (Wednesday)
  \item \textbf{Time:} 10:00 AM – 1:00 PM
  \item \textbf{Venue:} Main Seminar Hall
  \item \textbf{Speaker:} Dr. S. Ramakrishnan, Scientist, DRDO
\end{itemize}

All students are advised to attend the seminar in formal dress code and carry their college ID
cards.
```

\vspace{1em}

For further details, contact Mr. Rajesh Kumar, Seminar Coordinator.

\vspace{1.5em}

\begin{flushright}

\textbf{Dr. A. Meenakshi} \\

HOD, ECE Department

\end{flushright}

\end{tcolorbox}

\end{document}

🔍 SECTION-WISE EXPLANATION

1. Document Class and Packages

```latex
\documentclass[12pt]{article}
```

- `article`: Used for short documents like letters, notices, reports.
- `12pt`: Sets font size.

```latex
\usepackage[utf8]{inputenc}      % Supports special characters
\usepackage[a4paper,margin=1in]{geometry} % Sets page size and margins
\usepackage{tcolorbox}           % Creates styled and colored boxes
\usepackage{xcolor}              % Allows custom colors
\usepackage{graphicx}            % For inserting images (logo)
\usepackage{setspace}            % Adjusts line spacing
\usepackage{titling}             % Optional: used for title formatting
\pagestyle{empty}                % Removes page numbers
```

2. Custom Color Definitions

```latex
\definecolor{noticetitlebg}{RGB}{0,102,204}      % Dark blue for box title
\definecolor{noticebodybg}{RGB}{232,241,255}     % Light blue background for box
\definecolor{noticetext}{RGB}{0,0,0}             % Black text color (default)
```

You can change these RGB values to customize your color scheme.

3. Institution Header

```latex
\begin{center}
    \includegraphics[width=2.5cm]{logo.png} \\ % Logo on top (optional)
    \textbf{\LARGE XYZ College of Engineering} \\  % Institute Name
    \textit{Affiliated to Anna University, Chennai} \\ % Affiliation
    \textbf{Department of Electronics and Communication Engineering}
\end{center}
```

- Add your institution name, logo, department, and affiliation.
- The logo image (`logo.png`) must be in the same folder as the `.tex` file.

4. tcolorbox: Creating the Colored Notice Box

```latex
\begin{tcolorbox}[
    colback=noticebodybg!100,       % Background color of box
    colframe=noticetitlebg,         % Border color of box
    coltitle=white,                 % Title text color
    title=\centering \textbf{NOTICE}, % Box title
    fonttitle=\bfseries\Large,      % Font style and size of title
    boxrule=0.8mm,                  % Thickness of box border
    width=\textwidth                % Full width
]
```

- `tcolorbox` creates a bordered box with custom styles.
- The `title` parameter places "NOTICE" at the top of the box.
- You can replace `"NOTICE"` with `"CIRCULAR"` or `"ANNOUNCEMENT"` as needed.

5. Notice Content

```latex
\textbf{Date:} 18 June 2025 \\
\textbf{Subject:} \underline{Seminar on Embedded Systems}
```

- Displays the date and subject of the notice clearly.

```latex
This is to inform all students...
```

- Main body of the notice is written in formal tone.
- `\begin{itemize}...\end{itemize}` lists key event details:
  - Date
  - Time
  - Venue
  - Speaker

```latex
All students are advised...
```

- Concluding instructions or additional information.

6. Signature Block

```latex
\begin{flushright}
\textbf{Dr. A. Meenakshi} \\
HOD, ECE Department
\end{flushright}
```

- Aligns the signatory name and designation to the right.
- Can be changed to "Principal", "Registrar", etc.

logo.png

XYZ College of Engineering

Affiliated to Anna University, Chennai

Department of Electronics and Communication Engineering

NOTICE

Date: 18 June 2025
Subject: Seminar on Embedded Systems

This is to inform all students of the **ECE Department** that a seminar on **"Recent Trends in Embedded Systems"** is scheduled as follows:

- **Date:** 25 June 2025 (Wednesday)
- **Time:** 10:00 AM – 1:00 PM
- **Venue:** Main Seminar Hall
- **Speaker:** Dr. S. Ramakrishnan, Scientist, DRDO

All students are advised to attend the seminar in formal dress code and carry their college ID cards.

For further details, contact Mr. Rajesh Kumar, Seminar Coordinator.

Dr. A. Meenakshi
HOD, ECE Department

✅ Step-by-Step LaTeX Code to Include Pictures

latex Copy Edit

```latex
\documentclass{article}
\usepackage{graphicx}  % Required to include images
\usepackage{caption}   % Optional: for image captions
\usepackage{float}     % Optional: for precise image positioning

\begin{document}

\section*{Including an Image}

Here is an example image inserted in LaTeX:

\begin{figure}[H] % [H] forces the image to appear exactly here
    \centering
    \includegraphics[width=0.5\textwidth]{example-image.jpg} % Adjust width and filename
    \caption{This is a sample caption for the image.}
    \label{fig:sample}
\end{figure}

\end{document}
```

\documentclass{article}

\usepackage{graphicx} % Required to include images

\usepackage{caption}   % Optional: for image captions

\usepackage{float}   % Optional: for precise image positioning

\begin{document}

\section*{Including an Image}

Here is an example image inserted in LaTeX:

\begin{figure}[H] % [H] forces the image to appear exactly here

\centering

\includegraphics[width=0.5\textwidth]{example-image.jpg} % Adjust width and filename

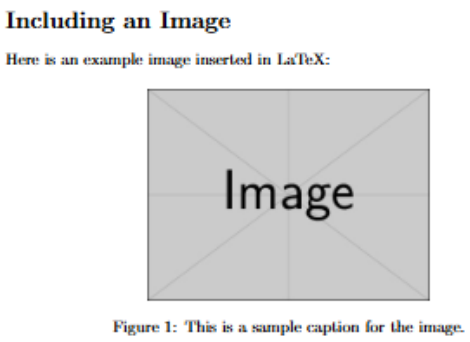
```
    \caption{This is a sample caption for the image.}
    \label{fig:sample}
\end{figure}

\end{document}
```

🔍 Key Commands Explained

Command	Purpose
`\usepackage{graphicx}`	Enables image inclusion
`\includegraphics{filename}`	Inserts the image file
`width=0.5\textwidth`	Scales image to 50% of the text width
`\caption{...}`	Adds a caption below the image
`\label{...}`	Labels image for referencing later
`figure` environment	Floats the image (allows positioning control)
`[H]`	From `float` package, keeps image exactly "Here"

📁 Image Requirements

- Image file (e.g., `example-image.jpg`) must be in the **same folder** as your `.tex` file.
- Supported formats: `.jpg`, `.png`, `.pdf`, `.eps`



To include multiple images side by side:

```latex
\begin{figure}[H]
\centering
\includegraphics[width=0.45\textwidth]{img1.jpg}
\hfill
\includegraphics[width=0.45\textwidth]{img2.jpg}
\caption{Two images side by side}
\end{figure}
```

\begin{figure}[H]

\centering

\includegraphics[width=0.45\textwidth]{img1.jpg}

\hfill

\includegraphics[width=0.45\textwidth]{img2.jpg}

\caption{Two images side by side}

\end{figure}

Figure 1: Two images side by side

Multiple Wrap Figures (Left & Right)

```
\documentclass[12pt]{article}
\usepackage[utf8]{inputenc}
\usepackage{wrapfig}
\usepackage{graphicx}
\usepackage{lipsum}     % For sample text (optional)
\usepackage{caption}
\usepackage{setspace}
\setstretch{1.15}

\begin{document}

\section*{Multiple Wrapped Figures Example}

% --- First Image (Left) ---
\begin{wrapfigure}{L}{0.35\textwidth}
   \centering
   \includegraphics[width=0.33\textwidth]{image1.jpg}
   \caption{Left image}
\end{wrapfigure}

\lipsum[1]  % Sample paragraph (you can replace with your real text)

% Add some vertical space to avoid overlap
\vspace{2em}

% --- Second Image (Right) ---
\begin{wrapfigure}{R}{0.35\textwidth}
```

```
    \centering
    \includegraphics[width=0.33\textwidth]{image2.jpg}
    \caption{Right image}
\end{wrapfigure}

\lipsum[2]  % More sample text

% Optional: Add more images with vertical space or page breaks
\vspace{2em}

% --- Third Image (Left again) ---
\begin{wrapfigure}{L}{0.35\textwidth}
    \centering
    \includegraphics[width=0.33\textwidth]{image3.jpg}
    \caption{Another left image}
\end{wrapfigure}

\lipsum[3]

\end{document}
```

Multiple Wrapped Figures Example

image1.jpg

Figure 1: Left image

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.

image2.jpg

Figure 2: Right image

image3.jpg

Figure 3: Another left image

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.

Full Two-Column Document (Most Common)

```
\documentclass[twocolumn,12pt]{article}

\usepackage[utf8]{inputenc}


\title{My Two-Column Document}

\author{Dinesh Kumar P}

\date{\today}


\begin{document}


\maketitle


\section*{Introduction}

This is a two-column document using the \texttt{twocolumn} class option. All content will
appear in two columns, including sections, text, and figures.


\section*{Another Section}

You can continue typing and the text will automatically flow across the two columns.


\end{document}
```

My Two-Column Document

Dinesh Kumar P

June 18, 2025

Introduction

This is a two-column document using the `twocolumn` class option. All content will appear in two columns, including sections, text, and figures.

Another Section

You can continue typing and the text will automatically flow across the two columns.

Partial Two-Column Layout using multicol

```
\documentclass[12pt]{article}

\usepackage[utf8]{inputenc}

\usepackage{multicol}


\begin{document}


\section*{Single Column Section}

This section appears in a single column.


\begin{multicols}{2}

This section will be split into two columns. You can write your content here and LaTeX will manage the column flow.


You can also use lists:

\begin{itemize}

   \item Point One

   \item Point Two

\end{itemize}

\end{multicols}


Back to single column here if you end the multicols environment.


\end{document}
```

Single Column Section

This section appears in a single column.

This section will be split into two columns. You can write your content here and LaTeX will manage the column flow.

You can also use lists:

- Point One
- Point Two

Back to single column here if you end the multicols environment.

Latex Code For Typing Letters

```
\documentclass[12pt]{letter}
\usepackage[utf8]{inputenc}
\usepackage{geometry}
\geometry{a4paper, left=1in, right=1in, top=1in, bottom=1in}
\usepackage{setspace}
\usepackage{lipsum} % For placeholder text (can remove)

\renewcommand{\baselinestretch}{1.2}

\begin{document}

%----------- Sender Address -----------
\noindent
\textbf{Dinesh Kumar P} \\
123, Anna Street \\
Coimbatore – 641001 \\
Tamil Nadu \\
\vspace{1em}

%----------- Date -----------
\noindent
\textbf{Date:} 18 June 2025 \\
\vspace{1em}

%----------- Recipient Address ----------
\noindent
To, \\
```

The Principal \\

XYZ College of Engineering \\

Chennai – 600113 \\

Tamil Nadu \\

\vspace{1em}

%----------- Subject -----------

\noindent

\textbf{Subject:} Request for Bonafide Certificate \\

\vspace{1em}

%----------- Salutation -----------

\noindent

Respected Sir/Madam, \\

\vspace{1em}

%----------- Body of Letter -----------

\noindent

I am Dinesh Kumar P, a final-year student of B.E. Electronics and Communication Engineering (Reg. No. 123456), studying in your esteemed institution. I kindly request you to issue a Bonafide Certificate for applying to a government scholarship scheme.

I assure you that the certificate will be used only for the said purpose.

\vspace{1em}

%----------- Complimentary Close -----------

\noindent

Thanking you. \\

```
\vspace{1em}

\noindent
Yours faithfully, \\
\vspace{2em}

\noindent
\textbf{Dinesh Kumar P} \\
Reg. No.: 123456

\end{document}
```

Dinesh Kumar P
123, Anna Street
Coimbatore – 641001
Tamil Nadu

Date: 18 June 2025

To,
The Principal
XYZ College of Engineering
Chennai – 600113
Tamil Nadu

Subject: Request for Bonafide Certificate

Respected Sir/Madam,

I am Dinesh Kumar P, a final-year student of B.E. Electronics and Communication Engineering (Reg. No. 123456), studying in your esteemed institution. I kindly request you to issue a Bonafide Certificate for applying to a government scholarship scheme.

I assure you that the certificate will be used only for the said purpose.

Thanking you.

Yours faithfully,

Dinesh Kumar P
Reg. No.: 123456

Writing Letter with Header and Image:

```
\documentclass[12pt]{letter}
\usepackage[utf8]{inputenc}
\usepackage{graphicx}
\usepackage{geometry}
\geometry{a4paper, left=1in, right=1in, top=1in, bottom=1in}
\usepackage{setspace}
\renewcommand{\baselinestretch}{1.2}

\begin{document}

%---------- Header with Logo and Institute Name ----------
\begin{minipage}{0.2\textwidth}
   \includegraphics[width=2.5cm]{logo.png} % Replace with your logo file
\end{minipage}
\hfill
\begin{minipage}{0.75\textwidth}
   \centering
   \textbf{\Large XYZ College of Engineering} \\
   \textit{Affiliated to Anna University, Chennai} \\
   No.123, College Road, Chennai – 600113, Tamil Nadu \\
   \texttt{Phone: (044) 1234 5678 \quad Email: xyzcollege@example.com}
\end{minipage}

\vspace{1em}
\hrule
\vspace{1em}
```

```
%---------- Sender Info ----------
\noindent
\textbf{From:} \\
Dinesh Kumar P \\
B.E. ECE, Final Year \\
XYZ College of Engineering \\
\vspace{1em}

%---------- Date ----------
\noindent
\textbf{Date:} 18 June 2025 \\
\vspace{1em}

%---------- Receiver Info ----------
\noindent
\textbf{To,} \\
The Principal \\
XYZ College of Engineering \\
Chennai – 600113 \\
\vspace{1em}

%---------- Subject ----------
\noindent
\textbf{Subject:} Request for Bonafide Certificate \\
\vspace{1em}

%---------- Salutation ----------
```

```
\noindent

Respected Sir/Madam, \\

\vspace{1em}


%---------- Body ----------

\noindent

I am Dinesh Kumar P, a final-year student of B.E. Electronics and Communication Engineering (Reg. No. 123456), studying in your esteemed institution. I kindly request you to issue a Bonafide Certificate for applying to a government scholarship scheme.


I assure you that the certificate will be used only for the said purpose.


\vspace{1em}


%---------- Closing ----------

\noindent

Thanking you. \\

\vspace{1em}


\noindent

Yours faithfully, \\

\vspace{2em}


\noindent

\textbf{Dinesh Kumar P} \\

Reg. No.: 123456


\end{document}
```

logo.png

XYZ College of Engineering

Affiliated to Anna University, Chennai

No.123, College Road, Chennai – 600113, Tamil Nadu

Phone: (044) 1234 5678 Email: xyzcollege@example.com

From:
Dinesh Kumar P
B.E. ECE, Final Year
XYZ College of Engineering

Date: 18 June 2025

To,
The Principal
XYZ College of Engineering
Chennai – 600113

Subject: Request for Bonafide Certificate

Respected Sir/Madam,

I am Dinesh Kumar P, a final year student of B.E. Electronics and Communication Engineering (Reg. No. 123456), studying in your esteemed institution. I kindly request you to issue a Bonafide Certificate for applying to a government scholarship scheme.

I assure you that the certificate will be used only for the said purpose.

Thanking you.

Yours faithfully,

Dinesh Kumar P
Reg. No.: 123456

Writing a Formal Letter in LaTeX

```latex
\documentclass{letter}
\usepackage[utf8]{inputenc}
\signature{Your Name}
\address{Your Address\\ City, ZIP}
\begin{document}

\begin{letter}{Recipient Name\\ Recipient Address}
\opening{Dear Sir/Madam,}

This is the body of your letter.

\closing{Sincerely,}

\end{letter}
\end{document}
```

Your Address
City, ZIP

June 18, 2025

Recipient Name
Recipient Address

Dear Sir/Madam,

This is the body of your letter.

Sincerely,

Your Name

Latex Code For Creating Simple Resume

```
\documentclass[a4paper,10pt]{article}

%------------- Packages -------------
\usepackage{geometry}
\usepackage{titlesec}
\usepackage{enumitem}
\usepackage{xcolor}
\usepackage[hidelinks]{hyperref}
\usepackage{multicol}
\usepackage{parskip}
```

```
\geometry{left=1.5cm, right=1.5cm, top=1.8cm, bottom=1.8cm}

%-------------- Colors and Fonts --------------
\definecolor{darkblue}{RGB}{0, 70, 140}
\definecolor{graytext}{RGB}{90, 90, 90}
\renewcommand{\familydefault}{\sfdefault}

%-------------- Section Styling --------------
\titleformat{\section}{\color{darkblue}\large\bfseries}{}{0em}{}[\titlerule]

%-------------- Begin Document --------------
\begin{document}

%-------------- Name and Contact Info --------------
\begin{center}
  {\Huge \textbf{Dinesh Kumar P}}\\
  \vspace{2pt}
  \href{mailto:dinesh@example.com}{dinesh@example.com} \quad | \quad +91 98765 43210 \quad | \quad Bangalore, India\\
  \href{https://www.linkedin.com/in/yourprofile}{LinkedIn} \quad | \quad \href{https://github.com/yourusername}{GitHub}
\end{center}

\vspace{0.3cm}

%-------------- Objective --------------
\section*{Objective}
```

Passionate and results-oriented professional with expertise in embedded systems, microcontroller interfacing, and computer architecture. Seeking a challenging role in research or product development where I can contribute my technical and academic skills.

%---------- Education ----------

\section*{Education}

\textbf{M.E. in Embedded Systems} \hfill 2019 \\

ABC Institute of Technology, Chennai \\

CGPA: 8.9/10

\textbf{B.E. in Electronics and Communication Engineering} \hfill 2017 \\

XYZ University, Bangalore \\

Percentage: 76\%

%---------- Experience ----------

\section*{Experience}

\textbf{Assistant Professor} \hfill 2020 – Present \\

XYZ Institute of Technology, Bangalore \\

\begin{itemize}[left=1em]

\item Designed and taught subjects like Microprocessor Systems, Embedded C, and Computer Architecture.

\item Guided student projects on interfacing 8051 with sensors, motors, and real-time applications.

\item Published 3 papers in peer-reviewed embedded systems conferences.

\end{itemize}

%---------- Technical Skills ----------

\section*{Technical Skills}

\begin{multicols}{2}

```
\begin{itemize}[left=1em]
   \item Programming: C, Embedded C, Python
   \item Microcontrollers: 8051, 8085, Arduino
   \item Tools: Keil, Proteus, MPLAB, MATLAB
   \item Interfaces: ADC, DAC, LCD, Keypad, Motor Drivers
   \item OS: Windows, Linux
\end{itemize}
\end{multicols}

%-------------- Projects --------------
\section*{Projects}
\textbf{IoT-Based Smart Home Monitoring System} \\
Implemented a wireless home automation system using ESP8266 and sensors integrated with 8051 and controlled via Android app.

\textbf{Temperature-Controlled Fan using 8051} \\
Designed a closed-loop control system using LM35 sensor and PWM output to regulate fan speed via DC motor.

%-------------- Certifications --------------
\section*{Certifications}
\begin{itemize}[left=1em]
   \item NPTEL Certification – Embedded Systems Design – Elite
   \item Coursera – Introduction to Internet of Things and Embedded Systems
\end{itemize}

%-------------- Languages --------------
\section*{Languages}
English (Fluent), Tamil (Native), Hindi (Intermediate)
```

\end{document}

Sure! Here's a detailed explanation of each part of the LaTeX resume code provided above, so you can understand and customize it easily:

🔷 1. Document Class

```latex
\documentclass[a4paper,10pt]{article}
```

- Sets the basic format of the document.
- `a4paper` : Use A4 paper size.
- `10pt` : Set base font size to 10pt (can also be `11pt` or `12pt`).

🔷 2. **Packages**

```latex
\usepackage{geometry}
\usepackage{titlesec}
\usepackage{enumitem}
\usepackage{xcolor}
\usepackage[hidelinks]{hyperref}
\usepackage{multicol}
\usepackage{parskip}
```

Each package adds a specific functionality:

- `geometry` : Controls page margins.
- `titlesec` : Customize section titles (e.g., font size, color).
- `enumitem` : Customize list formatting (`\item` , spacing).
- `xcolor` : Use custom colors (like blue for headings).
- `hyperref` : Makes email, links, and phone numbers clickable.
- `multicol` : Create multiple columns (used in the skills section).
- `parskip` : Adds spacing between paragraphs automatically (no need for `\\`).

🔷 3. **Page Layout and Colors**

```latex
\geometry{left=1.5cm, right=1.5cm, top=1.8cm, bottom=1.8cm}
\definecolor{darkblue}{RGB}{0, 70, 140}
\definecolor{graytext}{RGB}{90, 90, 90}
\renewcommand{\familydefault}{\sfdefault}
```

- Sets clean, balanced margins.
- Defines `darkblue` and `graytext` colors.
- Changes the font family to a sans-serif style for a modern look.

🔷 4. Section Style

```latex
\titleformat{\section}{\color{darkblue}\large\bfseries}{}{0em}{}[\titlerule]
```

- Customizes section headings:
  - Makes them `darkblue`
  - Uses `large` and `bold` font
  - Adds a horizontal line below each section (`\titlerule`)

🔷 5. Name and Contact Header

```latex
\begin{center}
    {\Huge \textbf{Dinesh Kumar P}}\\
    ...
\end{center}
```

- The `\Huge` command makes the name stand out.
- Contact information is centered and clickable using `\href`.

🔷 6. **Objective Section**

```latex
\section*{Objective}
...
```

- `\section*` creates an unnumbered section.
- States your career goal or summary.

🔷 7. **Education Section**

```latex
\textbf{M.E. in Embedded Systems} \hfill 2019
```

- `\textbf{}` bolds the degree name.
- `\hfill` pushes the year to the right.
- Simple paragraph layout for school, degree, CGPA, etc.

🔷 8. Experience Section

```latex
\begin{itemize}[left=1em]
    \item ...
\end{itemize}
```

- Uses a bullet list to describe job duties/responsibilities.
- `left=1em` indents items slightly.

🔷 9. Technical Skills in Columns

```latex
\begin{multicols}{2}
\begin{itemize}...
```

- `multicols` splits the skills list into 2 columns for compact display.

🔷 10. Projects Section

Each project is described with a title and one or two lines of explanation. You can use `\textbf{}` to emphasize the title.

🔷 11. Certifications and Languages

Simple bullet lists. You can add:

```latex
\item NPTEL – Embedded Systems – Elite
```

or

```latex
English (Fluent), Tamil (Native), Hindi (Intermediate)
```

Dinesh Kumar P

dinesh@example.com — +91 98765 43210 — Bangalore, India
LinkedIn — GitHub

Objective

Passionate and results-oriented professional with expertise in embedded systems, microcontroller interfacing, and computer architecture. Seeking a challenging role in research or product development where I can contribute my technical and academic skills.

Education

M.E. in Embedded Systems 2019
ABC Institute of Technology, Chennai
CGPA: 8.9/10

B.E. in Electronics and Communication Engineering 2017
XYZ University, Bangalore
Percentage: 76%

Experience

Assistant Professor 2020 – Present
XYZ Institute of Technology, Bangalore

- Designed and taught subjects like Microprocessor Systems, Embedded C, and Computer Architecture.
- Guided student projects on interfacing 8051 with sensors, motors, and real-time applications.
- Published 3 papers in peer-reviewed embedded systems conferences.

Technical Skills

- Programming: C, Embedded C, Python
- Microcontrollers: 8051, 8085, Arduino
- Tools: Keil, Proteus, MPLAB, MATLAB
- Interfaces: ADC, DAC, LCD, Keypad, Motor Drivers
- OS: Windows, Linux

Projects

IoT-Based Smart Home Monitoring System
Implemented a wireless home automation system using ESP8266 and sensors integrated with 8051 and controlled via Android app.

Temperature-Controlled Fan using 8051
Designed a closed-loop control system using LM35 sensor and PWM output to regulate fan speed via DC motor.

Certifications

- NPTEL Certification – Embedded Systems Design – Elite
- Coursera – Introduction to Internet of Things and Embedded Systems

Languages

English (Fluent), Tamil (Native), Hindi (Intermediate)

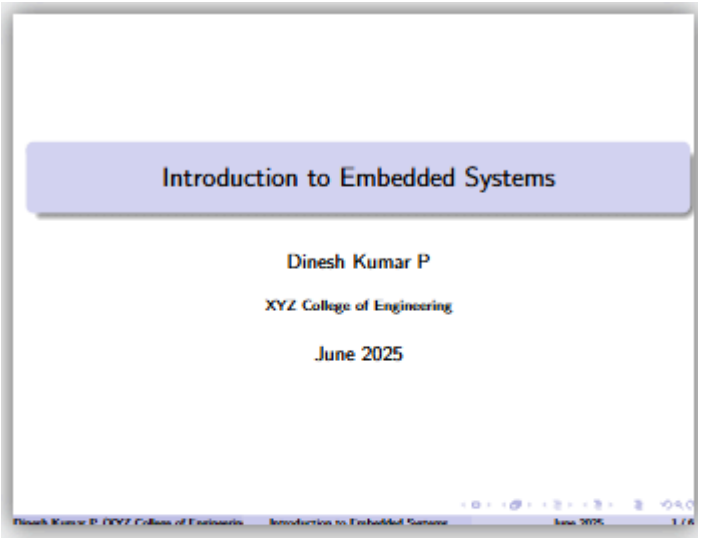
Sample Beamer slide Presentation:

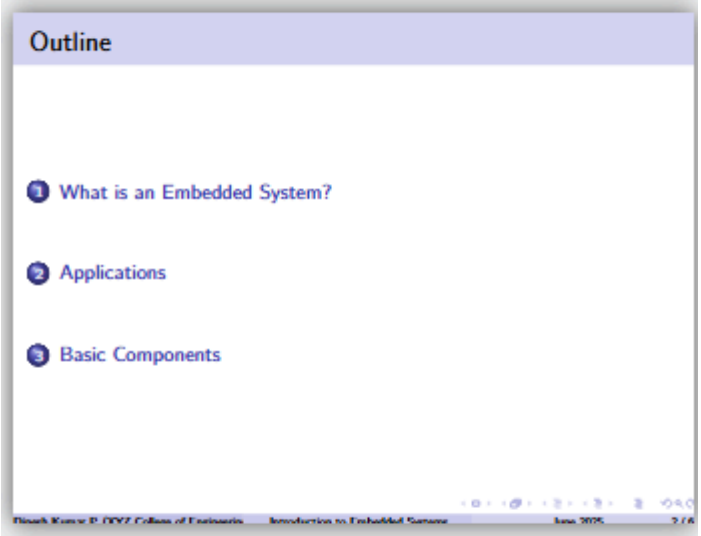
```
\documentclass{beamer}
\usepackage[utf8]{inputenc}
\usepackage{graphicx}
\usetheme{Madrid}  % You can change to Warsaw, Berlin, etc.
\usecolortheme{seahorse}  % Optional color theme

\title{Introduction to Embedded Systems}
\author{Dinesh Kumar P}
\institute{XYZ College of Engineering}
\date{June 2025}

\begin{document}

%--- Title Slide ---
\begin{frame}
  \titlepage
\end{frame}

%--- Outline Slide ---
\begin{frame}{Outline}
  \tableofcontents
\end{frame}

%--- Slide 1 ---
\section{What is an Embedded System?}
\begin{frame}{Definition}
  \begin{itemize}
```

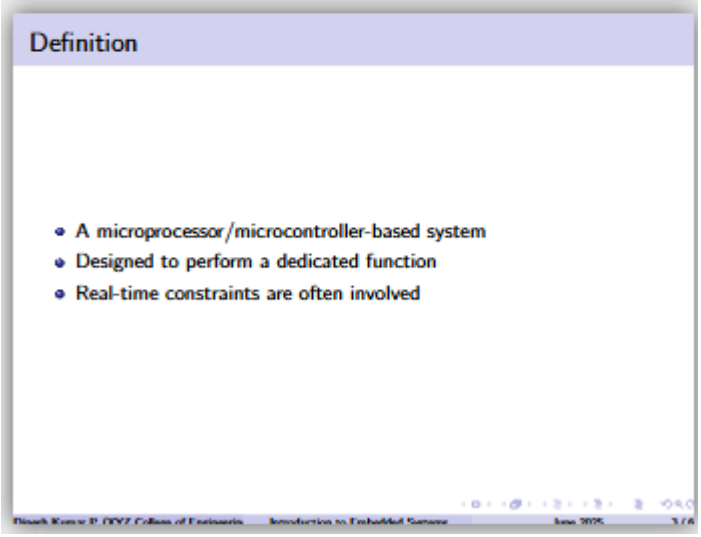
```
    \item A microprocessor/microcontroller-based system
    \item Designed to perform a dedicated function
    \item Real-time constraints are often involved
  \end{itemize}
\end{frame}

%--- Slide 2 ---
\section{Applications}
\begin{frame}{Real-World Applications}
  \begin{itemize}
    \item Automotive Systems (ABS, Airbags)
    \item Home Appliances (Washing Machines, Microwaves)
    \item Industrial Controllers
    \item Consumer Electronics
  \end{itemize}
\end{frame}

%--- Slide 3 ---
\section{Basic Components}
\begin{frame}{Components of Embedded System}
  \includegraphics[width=0.55\textwidth]{Picture1.jpg} % Add your image\\
      \caption{Typical Architecture}
    \end{frame}

%--- Final Slide ---
\begin{frame}{Thank You}
  \centering
  \Huge Questions?
```

\end{frame}

\end{document}







Real-World Applications

- Automotive Systems (ABS, Airbags)
- Home Appliances (Washing Machines, Microwaves)
- Industrial Controllers
- Consumer Electronics

Components of Embedded System

Typical Architecture

Thank You

Questions?

📃 Key Points

Element	Purpose
`\documentclass{beamer}`	Sets presentation mode
`\usetheme{Madrid}`	Theme for visual style
`\title, \author, \institute, \date`	Info used in the title slide
`\begin{frame}...\end{frame}`	Defines each slide
`\section{...}`	Adds section titles and updates outline

🎨 Optional Customizations

- Replace `Madrid` with `CambridgeUS`, `Warsaw`, `Berkeley`, etc.
- Use `\pause` inside `itemize` to reveal bullet points one by one.
- Include figures, tables, code blocks, or even video (with extra packages).

🎨 Commonly Used Beamer Themes

Here's a list of popular themes you can use with `\usetheme{}`:

Theme	Description
`Madrid`	Clean layout with sidebar on top (professional)
`Warsaw`	Sidebar on the left; good for TOC navigation
`CambridgeUS`	Simple and formal with top navigation
`Berkeley`	Left-hand navigation bar, minimal design
`Pittsburgh`	Title bar with navigation dots
`Frankfurt`	Sidebar and color blocks
`AnnArbor`	Yellow & blue color combination
`Darmstadt`	Sidebar on the right
`Boadilla`	Clean layout, centered headings
`Singapore`	Compact and clean (no sidebar)
`Montpellier`	Modern, elegant with header underline

✅ Example Usage

```latex
\documentclass{beamer}
\usetheme{Madrid}            % Layout theme
\usecolortheme{seahorse}     % Color theme
```

🎨 Available Color Themes (`\usecolortheme{}`)

Color Theme	Look
`default`	Standard colors
`seahorse`	Soft brown/blue
`dolphin`	Blue & white
`crane`	Yellow tones
`orchid`	Purple-based
`whale`	Dark blue
`rose`	Reddish tones
`albatross`	Light blue-grey
`beetle`	Green tones
`lily`	Purple with borders

🎛️ Combining Themes

You can **mix themes** to suit your style:

```latex
\usetheme{Berkeley}
\usecolortheme{orchid}
```

✅ Beamer Resume Presentation – LaTeX Code

```
\documentclass{beamer}

%---------------- Theme and Colors ------------------
\usetheme{Madrid}
\usecolortheme{seahorse}
\setbeamertemplate{navigation symbols}{}

%---------------- Packages -------------------------
\usepackage{multicol}
\usepackage{hyperref}
\usepackage{graphicx}

%---------------- Title Info ------------------------
\title[Dinesh Kumar P – Resume]{\textbf{Dinesh Kumar P}\\Resume Presentation}
\author{Assistant Professor | Embedded Systems}
\institute{XYZ Institute of Technology}
\date{\today}

%---------------- Document Starts -------------------
\begin{document}

%---------------- Title Slide -----------------------
\begin{frame}
  \titlepage
\end{frame}

%---------------- Objective Slide -------------------
```

```
\begin{frame}{Objective}

Passionate and results-oriented professional with expertise in embedded systems, microcontroller interfacing, and computer architecture. Seeking a challenging role in research or product development where I can contribute my technical and academic skills.

\end{frame}


%----------------- Education Slide -------------------

\begin{frame}{Education}

\begin{itemize}

  \item \textbf{M.E. in Embedded Systems}, ABC Institute of Technology, Chennai — \textit{2019} \\

  CGPA: 8.9/10

  \vspace{0.5em}

  \item \textbf{B.E. in ECE}, XYZ University, Bangalore — \textit{2017} \\

  Percentage: 76\%

\end{itemize}

\end{frame}


%----------------- Experience Slide ------------------

\begin{frame}{Experience}

\textbf{Assistant Professor} \\

XYZ Institute of Technology, Bangalore (2020–Present)

\begin{itemize}

  \item Taught Microprocessor Systems, Embedded C, and Architecture.

  \item Guided projects on 8051-based real-time systems.

  \item Published papers on embedded interfaces and AI integration.

\end{itemize}

\end{frame}
```

```
%----------------- Technical Skills ------------------
\begin{frame}{Technical Skills}
\begin{multicols}{2}
\begin{itemize}
  \item C, Embedded C, Python
  \item 8051, 8085, Arduino
  \item Keil, Proteus, MPLAB
  \item ADC/DAC, LCD, Keypad
  \item Windows, Linux
\end{itemize}
\end{multicols}
\end{frame}

%----------------- Projects Slide --------------------
\begin{frame}{Projects}
\textbf{IoT-Based Smart Home Monitoring System} \\
Wireless home automation using ESP8266 and 8051.

\vspace{1em}
\textbf{Temperature-Controlled Fan using 8051} \\
PWM control system based on temperature sensor LM35.
\end{frame}

%----------------- Certifications --------------------
\begin{frame}{Certifications}
\begin{itemize}
  \item NPTEL – Embedded Systems Design – Elite
  \item Coursera – IoT and Embedded Systems
```

```
\end{itemize}
\end{frame}

%----------------- Languages Slide -------------------
\begin{frame}{Languages}
\begin{itemize}
  \item English – Fluent
  \item Tamil – Native
  \item Hindi – Intermediate
\end{itemize}
\end{frame}
%----------------- Contact Slide ---------------------
\begin{frame}{Contact Me}
\begin{center}
\textbf{Dinesh Kumar P} \\
Assistant Professor – Embedded Systems \\
XYZ Institute of Technology, Bangalore

\vspace{1em}
\href{mailto:dinesh@example.com}{dinesh@example.com} \\
+91 98765 43210 \\
\href{https://linkedin.com/in/yourprofile}{LinkedIn} \quad | \quad
\href{https://github.com/yourgithub}{GitHub}
\end{center}
\end{frame}

\end{document}
```

Dinesh Kumar P
Resume Presentation

Assistant Professor — Embedded Systems

XYZ Institute of Technology

June 18, 2025

Objective

Passionate and results-oriented professional with expertise in embedded systems, microcontroller interfacing, and computer architecture. Seeking a challenging role in research or product development where I can contribute my technical and academic skills.

Education

- **M.E. in Embedded Systems**, ABC Institute of Technology, Chennai — *2019*
  CGPA: 8.9/10
- **B.E. in ECE**, XYZ University, Bangalore — *2017*
  Percentage: 76%

Experience

Assistant Professor
XYZ Institute of Technology, Bangalore (2020–Present)

- Taught Microprocessor Systems, Embedded C, and Architecture.
- Guided projects on 8051-based real-time systems.
- Published papers on embedded interfaces and AI integration.

Technical Skills

- C, Embedded C, Python
- 8051, 8085, Arduino
- Keil, Proteus, MPLAB
- ADC/DAC, LCD, Keypad
- Windows, Linux

Projects

IoT-Based Smart Home Monitoring System
Wireless home automation using ESP8266 and 8051.

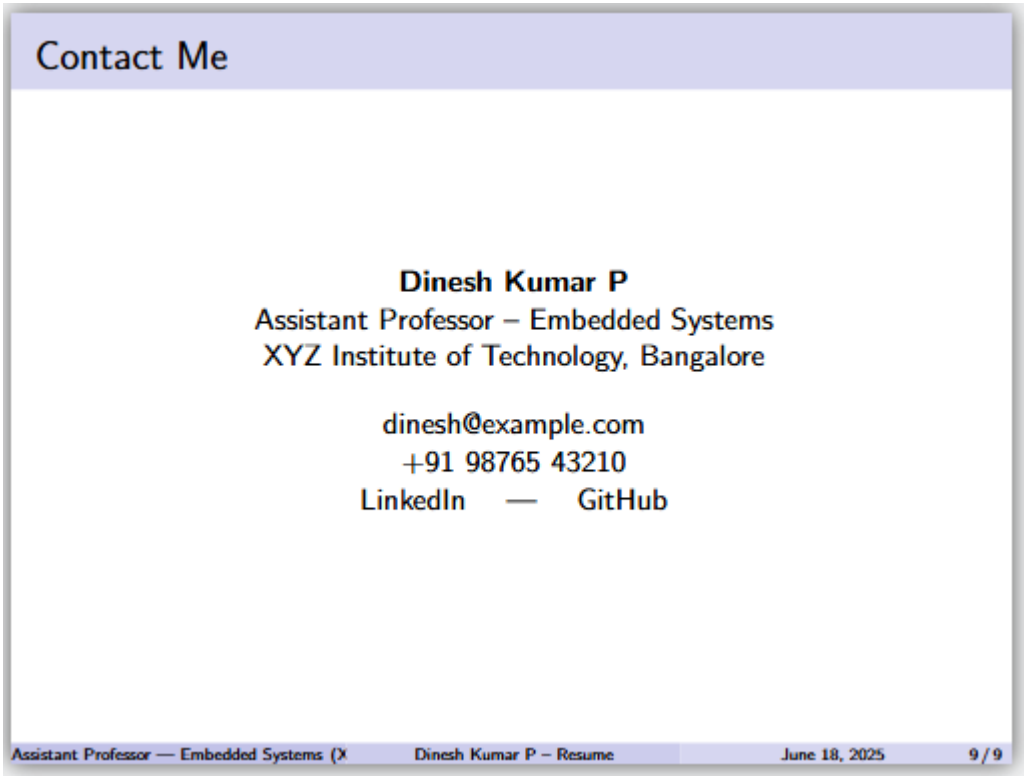
Temperature-Controlled Fan using 8051
PWM control system based on temperature sensor LM35.

Certifications

- NPTEL – Embedded Systems Design – Elite
- Coursera – IoT and Embedded Systems

Languages

- English – Fluent
- Tamil – Native
- Hindi – Intermediate



🔍 What This Does

Section	Purpose
`\usetheme{Madrid}`	Clean and modern Beamer theme
`\titlepage`	Shows name, role, and institution on the first slide
Each `\begin{frame}`	Represents a new slide
`\multicols`	Splits skillsets into columns for neatness
`\hyperref`	Makes email/links clickable

Latex Code for Creating Table

Basic Table Example

latex

```latex
\documentclass{article}
\begin{document}

\begin{tabular}{|c|c|c|}
\hline
\textbf{S.No} & \textbf{Name} & \textbf{Score} \\
\hline
1 & Alice & 85 \\
2 & Bob & 90 \\
3 & Charlie & 78 \\
\hline
\end{tabular}

\end{document}
```

Explanation:

- `\begin{tabular}{|c|c|c|}`:
  - `|` adds vertical lines.
  - `c` centers each column (`l` = left, `r` = right).
- `\hline`: Adds a horizontal line.
- `\\`: Ends the current row.
- `&`: Separates columns in a row.

\documentclass{article}

\begin{document}

\begin{tabular}{|c|c|c|}

\hline

\textbf{S.No} & \textbf{Name} & \textbf{Score} \\

\hline

1 & Alice & 85 \\

S.No	Name	Score
1	Alice	85
2	Bob	90
3	Charlie	78

2 & Bob & 90 \\

3 & Charlie & 78 \\

\hline

\end{tabular}

\end{document}

Basic Example Using \multicolumn

Basic Example Using `\multicolumn`

latex Copy Edit

```latex
\documentclass{article}
\begin{document}

\begin{tabular}{|c|c|c|}
\hline
\multicolumn{2}{|c|}{Name and Age} & Score \\
\hline
Name & Age & Score \\
\hline
Alice & 23 & 85 \\
Bob & 22 & 90 \\
\hline
\end{tabular}

\end{document}
```

Explanation:

latex Copy Edit

```latex
\multicolumn{2}{|c|}{Name and Age}
```

- `2`: Number of columns to merge
- `|c|`: Column formatting (centered with vertical bars)
- `Name and Age`: Text shown across the merged columns

\documentclass{article}

\begin{document}

\begin{tabular}{|c|c|c|}

\hline

\multicolumn{2}{|c|}{Name and Age} & Score \\

\hline

Name & Age & Score \\

\hline

Alice & 23 & 85 \\

Bob & 22 & 90 \\

\hline

\end{tabular}

\end{document}

Name and Age		Score
Name	Age	Score
Alice	23	85
Bob	22	90

- **With Multiple `\multicolumn`s**

latex Copy Edit

```latex
\documentclass{article}
\begin{document}

\begin{tabular}{|c|c|c|c|}
\hline
\multicolumn{2}{|c|}{Personal Info} & \multicolumn{2}{c|}{Scores} \\
\hline
Name & Age & Math & Science \\
\hline
Alice & 23 & 90 & 85 \\
Bob & 22 & 88 & 89 \\
\hline
\end{tabular}

\end{document}
```

```
\documentclass{article}
\begin{document}
\begin{tabular}{|c|c|c|c|}
\hline
\multicolumn{2}{|c|}{Personal Info} & \multicolumn{2}{c|}{Scores} \\
\hline
Name & Age & Math & Science \\
\hline
Alice & 23 & 90 & 85 \\
Bob & 22 & 88 & 89 \\
\hline
\end{tabular}
\end{document}
```

Personal Info		Scores	
Name	Age	Math	Science
Alice	23	90	85
Bob	22	88	89

Example: Table with Colored Rows and Borders

latex

```latex
\documentclass{article}
\usepackage[table]{xcolor}
\usepackage{colortbl}
\begin{document}

\rowcolors{2}{gray!15}{white} % Alternate row colors

\begin{tabular}{|c|c|c|}
\hline
\rowcolor{blue!20} % Header row color
\textbf{S.No} & \textbf{Name} & \textbf{Score} \\
\hline
1 & Alice & 85 \\
2 & Bob & 90 \\
3 & Clara & 88 \\
\hline
\end{tabular}

\end{document}
```

Explanation:

- `\rowcolors{2}{gray!15}{white}`: Starts alternating colors from the 2nd row.
- `\rowcolor{blue!20}`: Applies a background color to a single row.
- `|` and `\hline`: Add **vertical and horizontal** borders.
- `gray!15`: 15% gray shade (adjustable). You can also use colors like `red!30`, `green!10`, etc.

\documentclass{article}

\usepackage[table]{xcolor}

\usepackage{colortbl}

\begin{document}

\rowcolors{2}{gray!15}{white} % Alternate row colors

\begin{tabular}{|c|c|c|}

\hline

```
\rowcolor{blue!20} % Header row color
\textbf{S.No} & \textbf{Name} & \textbf{Score} \\
\hline
1 & Alice & 85 \\
2 & Bob & 90 \\
3 & Clara & 88 \\
\hline
\end{tabular}
\end{document}
```

S.No	Name	Score
1	Alice	85
2	Bob	90
3	Clara	88

✅ Styled Table Example

latex Copy Edit

```latex
\documentclass{article}
\usepackage[table]{xcolor}
\usepackage{colortbl}
\usepackage{caption}
\usepackage{array}
\usepackage{geometry}
\geometry{margin=1in}

\begin{document}

\begin{center}
\captionsetup{font=bf, justification=centering}
\captionof{table}{\textbf{Performance Report of Students}}
```

```latex
\rowcolors{2}{gray!10}{white}
\begin{tabular}{
    >{\centering\arraybackslash}p{2cm}  % S.No column
    >{\centering\arraybackslash}p{4cm}  % Name column
    >{\centering\arraybackslash}p{3cm}  % Subject column
    >{\centering\arraybackslash}p{2cm}  % Score column
}
\rowcolor{blue!20}
\textbf{S.No} & \textbf{Name} & \textbf{Subject} & \textbf{Score} \\
\hline
1 & Alice Johnson & Mathematics & 92 \\
2 & Bob Smith & Physics & 88 \\
3 & Clara White & Chemistry & 95 \\
4 & David Lee & Biology & 85 \\
5 & Eva Green & English & 90 \\
\end{tabular}
\end{center}

\end{document}
```

🔍 Features Explained:

- `\rowcolors{2}{gray!10}{white}`: Light zebra-striping for readability.
- `\rowcolor{blue!20}`: Distinct header background.
- `>{\centering\arraybackslash}p{Xcm}`: Fixed-width, **centered** columns using `array` package.
- `\captionof{table}`: Works outside floating environments like `table`.
- `\geometry{margin=1in}`: Adjusts page margin for better spacing.

\documentclass{article}

\usepackage[table]{xcolor}

\usepackage{colortbl}

\usepackage{caption}

\usepackage{array}

\usepackage{geometry}

\geometry{margin=1in}

```
\begin{document}
\begin{center}
\captionsetup{font=bf, justification=centering}
\captionof{table}{\textbf{Performance Report of Students}}
\rowcolors{2}{gray!10}{white}
\begin{tabular}{
   >{\centering\arraybackslash}p{2cm}  % S.No column
   >{\centering\arraybackslash}p{4cm}  % Name column
   >{\centering\arraybackslash}p{3cm}  % Subject column
   >{\centering\arraybackslash}p{2cm}  % Score column
}
\rowcolor{blue!20}
\textbf{S.No} & \textbf{Name} & \textbf{Subject} & \textbf{Score} \\
\hline
1 & Alice Johnson & Mathematics & 92 \\
2 & Bob Smith & Physics & 88 \\
3 & Clara White & Chemistry & 95 \\
4 & David Lee & Biology & 85 \\
5 & Eva Green & English & 90 \\
\end{tabular}
\end{center}
\end{document}
```

Table 1: Performance Report of Students

S.No	Name	Subject	Score
1	Alice Johnson	Mathematics	92
2	Bob Smith	Physics	88
3	Clara White	Chemistry	95
4	David Lee	Biology	85
5	Eva Green	English	90

Latex Code for Typing Mathematical Equations:

```
\documentclass{article}
\usepackage{amsmath}
\begin{document}
\[
E = mc^2
\]
\end{document}
```

\documentclass{article}

\usepackage{amsmath}

\begin{document}

\[$$E = mc^2$$

E = mc^2

\]

\end{document}

🔢 Basic Arithmetic & Relations

Symbol	LaTeX Code	Rendered
Plus	`+`	$+$
Minus	`-`	$-$
Multiplication	`\times`	$\times$
Dot Product	`\cdot`	$\cdot$
Division	`\div`	$\div$
Equals	`=`	$=$
Not equal	`\neq`	$\neq$
Less than	`<`	$<$
Greater than	`>`	$>$
Less or equal	`\leq`	$\leq$
Greater or equal	`\geq`	$\geq$

🧮 Fractions, Powers, Roots

Symbol	LaTeX Code	Rendered
Fraction	`\frac{a}{b}`	$\frac{a}{b}$
Square Root	`\sqrt{x}`	$\sqrt{x}$
n-th Root	`\sqrt[n]{x}`	$\sqrt[n]{x}$
Superscript	`x^2`	x^2
Subscript	`a_i`	a_i

📐 Greek Letters

Greek Letter	LaTeX Code	Greek Letter	LaTeX Code
α	`\alpha`	β	`\beta`
γ	`\gamma`	δ	`\delta`
ε	`\epsilon`	θ	`\theta`
λ	`\lambda`	μ	`\mu`
π	`\pi`	ρ	`\rho`
σ	`\sigma`	φ	`\phi`
ω	`\omega`	∞	`\infty`

∑ Summations, Integrals & Limits

Symbol	LaTeX Code	Rendered
Summation	`\sum_{i=1}^{n} i`	$\sum_{i=1}^{n} i$
Integral	`\int_{a}^{b} f(x)\,dx`	$\int_a^b f(x)\,dx$
Limit	`\lim_{x \to 0} f(x)`	$\lim_{x \to 0} f(x)$
Partial Deriv	`\frac{\partial y}{\partial x}`	$\frac{\partial y}{\partial x}$

🧰 Other Symbols

Symbol	LaTeX Code	Rendered
Infinity	`\infty`	∞
Approximate	`\approx`	$\approx$
Proportional to	`\propto`	$\propto$
Therefore	`\therefore`	$\therefore$
Because	`\because`	$\because$
Angle	`\angle`	$\angle$
Degree	`^{\circ}`	90°

FAMOUS MATHEMATICAL EQUATIONS WRITTEN IN LATEX CODE

1. Einstein's Mass-Energy Equivalence

```latex
E = mc^2
```

$$E = mc^2$$

2. Pythagorean Theorem

```latex
a^2 + b^2 = c^2
```

$$a^2 + b^2 = c^2$$

3. Quadratic Formula

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

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

4. Euler's Identity

```latex
e^{i\pi} + 1 = 0
```

$$e^{i\pi} + 1 = 0$$

5. Newton's Second Law

```latex
F = ma
```

$$F = ma$$

6. Area of a Circle

```latex
A = \pi r^2
```

$$A = \pi r^2$$

7. Binomial Theorem

```latex
(a + b)^n = \sum_{k=0}^{n} \binom{n}{k} a^{n-k} b^k
```

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8. Fourier Series

f(x) = a_0 + \sum_{n=1}^{\infty} \left(a_n \cos \frac{n\pi x}{L} + b_n \sin \frac{n\pi x}{L} \right)

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```
\documentclass{article}
\usepackage{amsmath}
\begin{document}
\[
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\]
\end{document}
```

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9. Schrödinger Equation (Time-Dependent)

latex

```
i\hbar \frac{\partial \psi}{\partial t} = \hat{H} \psi
```

$$i\hbar \frac{\partial \psi}{\partial t} = \hat{H} \psi$$

10. Maxwell's Equations (Integral Form)

\begin{aligned}

&\oint_S \vec{E} \cdot d\vec{A} = \frac{q_{\text{inside}}}{\varepsilon_0} \\

&\oint_S \vec{B} \cdot d\vec{A} = 0 \\

&\oint_C \vec{E} \cdot d\vec{l} = - \frac{d}{dt} \int_S \vec{B} \cdot d\vec{A} \\

&\oint_C \vec{B} \cdot d\vec{l} = \mu_0 I + \mu_0 \varepsilon_0 \frac{d}{dt} \int_S \vec{E} \cdot d\vec{A}

\end{aligned}

$$
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\oint_S \vec{E} \cdot d\vec{A} &= \frac{q_{\text{inside}}}{\varepsilon_0} \\
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\end{aligned}
$$

Editing

```latex
\documentclass{article}
\usepackage{amsmath}
\begin{document}

\begin{align}
\oint_S \vec{E} \cdot d\vec{A} &= \frac{q_{\text{inside}}}{\varepsilon_0} \\
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\end{align}

\end{document}
```

\documentclass{article}

\usepackage{amsmath}

\begin{document}

\begin{align}

\oint_S \vec{E} \cdot d\vec{A} &= \frac{q_{\text{inside}}}{\varepsilon_0} \\

\oint_S \vec{B} \cdot d\vec{A} &= 0 \\

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\end{align}

\end{document}

$$\oint_S \vec{E} \cdot d\vec{A} = \frac{q_{\text{inside}}}{\varepsilon_0} \tag{1}$$

$$\oint_S \vec{B} \cdot d\vec{A} = 0 \tag{2}$$

$$\oint_C \vec{E} \cdot d\vec{l} = -\frac{d}{dt} \int_S \vec{B} \cdot d\vec{A} \tag{3}$$

$$\oint_C \vec{B} \cdot d\vec{l} = \mu_0 I + \mu_0 \varepsilon_0 \frac{d}{dt} \int_S \vec{E} \cdot d\vec{A} \tag{4}$$