

EXPERIMENT 1

Design a professional resume using templates.

Piyush Kumar Karsh

+91-6267896216 | karshpiyush1@gmail.com | [Linkedin.com/in/piyush-kumar-karsh](https://www.linkedin.com/in/piyush-kumar-karsh)

Education

Rungta International Skills University | Master of Computer Applications (AI/ML) Sept 2025 - Present

- Python, Artificial Intelligence, Operating System, Computer Architecture, Graphic Design.

Rungta College of Engineering and Technology | Bachelor of Computer Applications July 2021 – March 2025

- C, C++, Python, JavaScript, PHP, Web Technology CSS, HTML, Computer Architecture, Networking & Data Structures, Algorithm.

Skills

- **Languages:** C, C++, Java Python and JavaScript
- **Technologies:** Windows and Linux
- **Bilingual:** (Hindi & English)

Projects

1. Developed a Car Rental System for College Project in BCA FINAL YEAR
2. Created a Weather App using API

EXPERIMENT 2

Create a Career Oriented Presentation with 7 slides using transitions and animations.



Building a Successful Career in AI & Machine Learning

Your Pathway as an MCA Specialist



What is AI & Machine Learning?

Artificial Intelligence (AI)

Enables machines to perform tasks traditionally requiring human intelligence: learning, reasoning, and problem-solving.

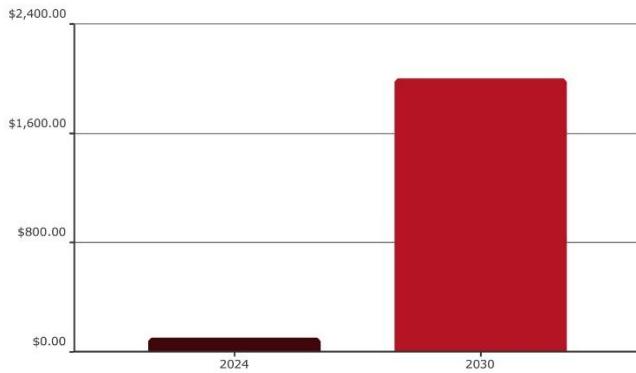
Machine Learning (ML)

A crucial subset of AI, where systems learn from data to automatically improve and make predictions or decisions without explicit programming.

Evolution T Impact

From simple automation to complex learning, AI/ML is revolutionizing industries and creating new possibilities across all sectors.

The Booming AI/ML Job Market



The AI industry, valued at [\\$100B in 2024](#), is projected to skyrocket to [\\$2 trillion by 2030](#), according to Next Move Strategy Consulting. This exponential growth fuels an unprecedented demand for skilled professionals.

High-Demand Roles

- Data Scientist
- Machine Learning Engineer
- AI Researcher
- Natural Language Processing Specialist

AI-driven roles are rapidly expanding, offering diverse opportunities. Youth employment in tech is rising, with AI skills significantly boosting employability even amidst global challenges.

Essential Skills for AI/ML Careers



Programming Proficiency

Master languages like [Python](#), R, and Java, which are fundamental for AI/ML development.



Analytical Foundations

Develop a strong understanding of algorithms, statistics, and complex data structures.



Framework Experience

Gain hands-on experience with leading ML frameworks: [TensorFlow](#), PyTorch, and Scikit-learn.



Critical Soft Skills

Cultivate problem-solving abilities, effective communication, and a mindset for continuous learning.



Building Your Portfolio: Projects Internships

Real-World Projects

Engage in practical AI/ML projects such as image recognition, developing chatbots, or building recommendation systems to apply your knowledge.

Open-Source Competitions

Contribute to open-source AI initiatives or participate in Kaggle competitions to enhance your skills and gain visibility within the community.

Valuable Internships

Secure internships that offer practical exposure to industry challenges and provide excellent opportunities for professional networking.



Navigating the AI Job Search

01

Informational Interviews

Conduct interviews to gain insights into various roles and companies, helping you refine your career path.

02

Tailored Resumes

Customize your resume to emphasize AI/ML skills and the measurable impact of your projects.

03

Strategic Platforms

Utilize professional platforms like LinkedIn, GitHub, and specialized AI job boards for opportunities.

04

Interview Preparation

Prepare diligently for technical interviews, focusing on coding challenges and ML case studies.



Your Future in AI & ML Starts Now!

AI is not just a field; it's a transformative force reshaping every industry. Your expertise can drive tomorrow's innovations and solve some of the world's most complex problems.

"AI is the new electricity"

-Andrew Ng

Embrace continuous learning, keep building impactful projects, and actively connect with the AI community to stay at the forefront of this dynamic field. The power to shape the future is in your hands.

EXPERIMENT 3

Create a social media poster for “DIGITAL AWARENESS WEEK” using CANVA



DIGITAL AWARENESS WEEK

Explore the importance of digital literacy and safety practices online

Register
NOW

December 16-12-2025
www.rungta.uni.com

EXPERIMENT 4

Compose & send a professional email with an attachment as “you are applying for an internship, send email to HR with your resume attached”.

 Piyush Kumar Karsh <karshpiyush1@gmail.com>

Application for Internship
1 message

Piyush Kumar Karsh <karshpiyush1@gmail.com>
Cc: priya.das@rungta.ac.in
3cc: priya.das@rungta.ac.in <priya.das@rungta.ac.in>

Tue, Dec 12, 2025 at 11:05

Piyush Kumar Karsh
Bhilai, CG.
Phone: +916267896216
Email: karshpiyush1@gmail.com
Date: 12 Dec 2025

Hiring Manager
Deloitte
Bangalore, Karnataka

Subject: Application for Full stack Web developer

Respected Sir/Madam,

I am writing to express my interest in the Full stack web developer role in your organisation. I have recently completed my MCA (Master of Computer Applications) and I am looking for an opportunity to begin my career in the IT industry.

During my MCA, I gained strong foundations in Java, Python, DBMS, SQL, HTML, CSS and Data Structures. I have also worked on academic projects where I learnt how to design backend logic, implement database connectivity and develop user interfaces. I am familiar with Git/GitHub, basic SDLC concepts and teamwork in group projects. I learn fast and can adapt to professional environments quickly.

I am confident that I can contribute positively as a beginner with a sincere learning attitude. It would be an honour if you consider my profile for an interview. I am ready to join immediately and would love to grow along with the organisation.

Thank you for your time and consideration.

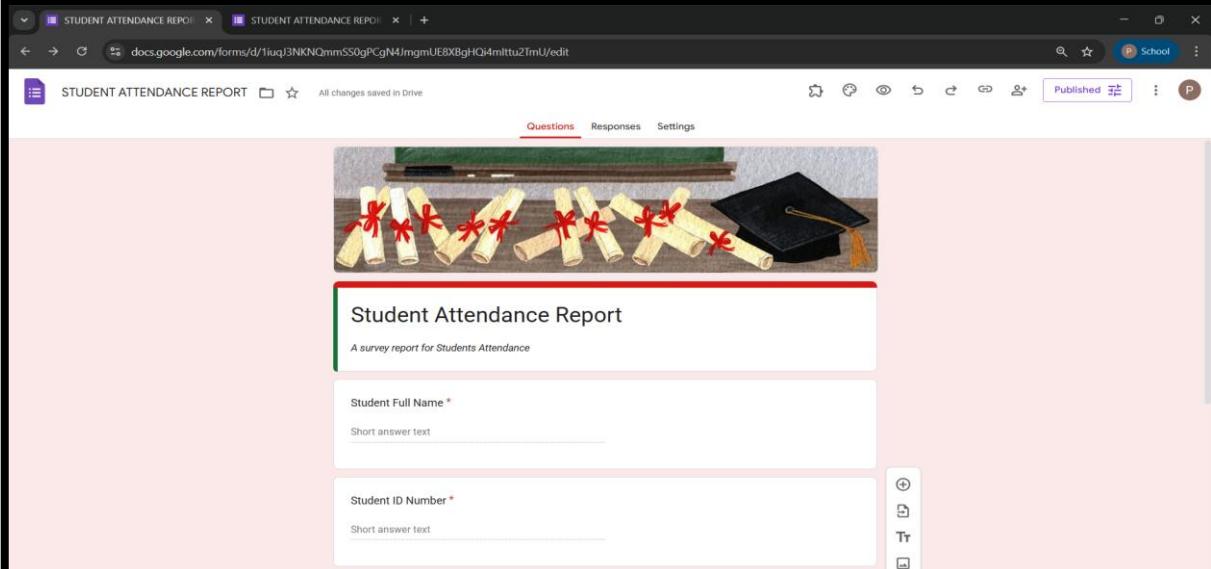
Regards,
Piyush Kumar Karsh
Attachments:

 Piyush.Resume.pdf
191 KB

EXPERIMENT 5

Design a complete Google Form survey and analyse responses.

 Create a Google Form titled “Student Attendance Report”



STUDENT ATTENDANCE REPORT

Questions Responses Settings

Student Attendance Report

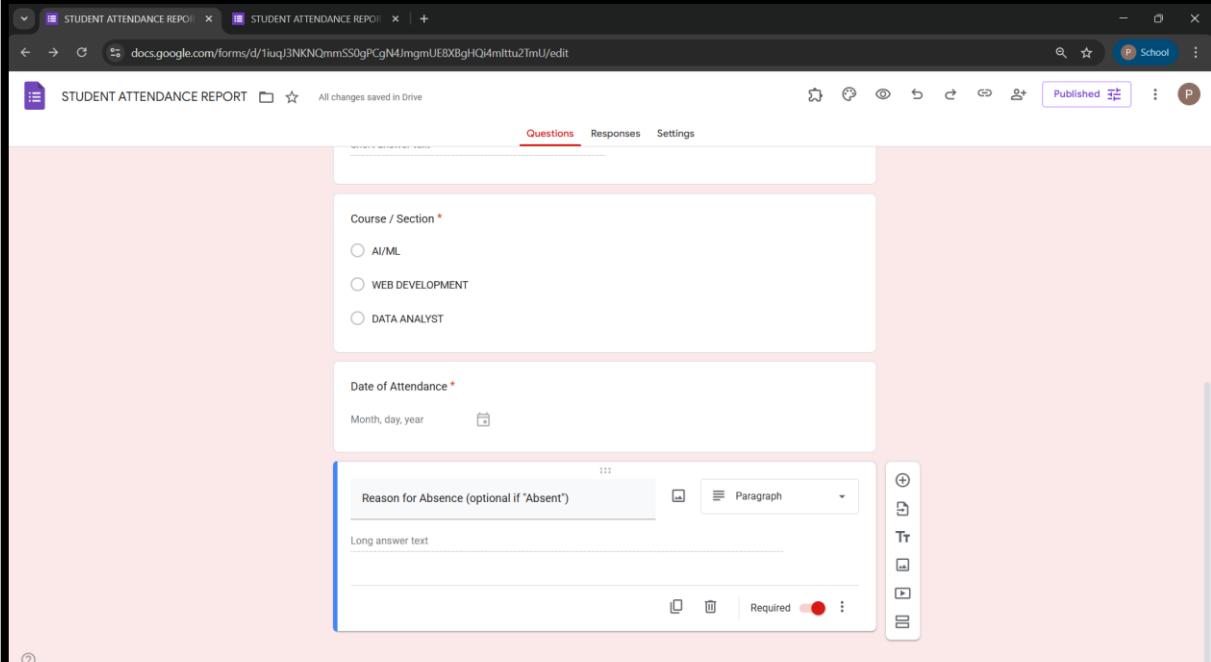
A survey report for Students Attendance

Student Full Name *

Short answer text

Student ID Number *

Short answer text



STUDENT ATTENDANCE REPORT

Questions Responses Settings

Course / Section *

AI/ML
 WEB DEVELOPMENT
 DATA ANALYST

Date of Attendance *

Month, day, year

Reason for Absence (optional if "Absent")

Long answer text

Required

STUDENT ATTENDANCE REPORT | STUDENT ATTENDANCE REPORT | + docs.google.com/forms/d/1iuqJ3NKNQmmSS0gPCgN4JmgmUE8XBgHQ4mltu2TmU/edit#responses

STUDENT ATTENDANCE REPORT All changes saved in Drive Published P

Questions Responses Settings

Student Full Name
3 responses

Girdhar Chouhan
Aman sidar
Jagdish Kumar pudo

Student ID Number
3 responses

10526
Ru-25-10158
10604

Course / Section
3 responses

Copy chart

AIIML 33.3%
WEB DEVELOPMENT 33.3%
DATA ANALYST 33.3%

STUDENT ATTENDANCE REPORT | STUDENT ATTENDANCE REPORT | + docs.google.com/forms/d/1iuqJ3NKNQmmSS0gPCgN4JmgmUE8XBgHQ4mltu2TmU/edit#responses

STUDENT ATTENDANCE REPORT All changes saved in Drive Published P

Questions Responses Settings

Course / Section
3 responses

Copy chart

AIIML 33.3%
WEB DEVELOPMENT 33.3%
DATA ANALYST 33.3%

Date of Attendance
3 responses

Sep 2001 14
Jan 2026 13 18

Reason for Absence (optional if 'Absent')
3 responses

Sick
Maybe I don't know
I am sick

EXPERIMENT 6

Demonstrate the creation and management of your digital Identity.

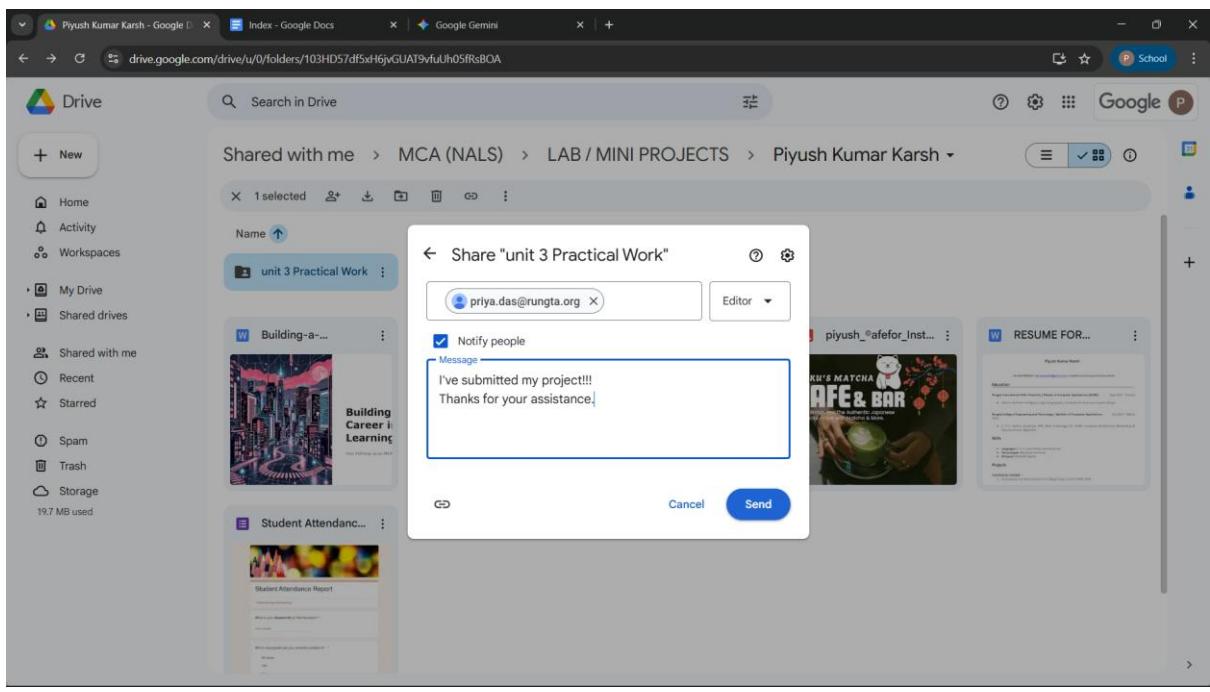
The screenshot shows a LinkedIn profile page for Piyush Kumar Karsh. At the top, there's a navigation bar with links for Home, My Network, Jobs, Messaging, Notifications, and Me. Below the navigation is a search bar and a "Enhance cover image" button. The main profile area features a circular profile picture of a young man. To the right of the picture are buttons for "Profile language" (set to English) and "Public profile & URL" (link: www.linkedin.com/in/piyush-kumar-karsh-446a45347). A section titled "Who your viewers also viewed" shows a profile for Piyush Kumar as a 3rd+ Cybersecurity Intern at Codec Technologies India | CyberMSI... with a "Message" button. Below this is a "Suggested for you" section with a message from AI to "Set up your profile in minutes with a resume". The bottom of the page shows a "People you may know" section with profiles for Mohammad Adnan and Mayur Upadhyay, each with a "Connect" button. The URL in the address bar is https://www.linkedin.com/feed/?nis=true&

This screenshot shows the LinkedIn profile editing interface for the same user. The top navigation bar is identical. The main area displays various sections for profile enhancement: "Analytics" (1 profile view, 0 post impressions, 1 search appearance), "Activity" (0 followers, "You haven't posted yet"), "Experience" (Job Title: Organization, 2023 - present, "Add experience" button), and "Education" (plus sign and edit icon). To the right, a sidebar lists recommended connections: Rajat Jain (Full Stack Developer | Shopify Developer | Next.js | React.js ...), Yuvraj Raghuvanshi (Full Stack Developer | Node.js | Express.js | Next.js | React.js ...), and Sarthak Raut (Associate System Engineer @ American Chase). Each connection has a "Connect" button. The URL in the address bar is https://linkedin.com/in/piyush-kumar-karsh-446a45347/

EXPERIMENT 7

Create a new folder named “Unit 3 Practical Work”.

- Upload 3 different files (PDF, image, document).
- Organize them in subfolders: Notes, Images, Assignments.
- Share the main folder with your teacher



EXPERIMENT 8

Identify one real phishing email : A final-year student, Aman, receives a LinkedIn message saying:

"You are shortlisted for a Remote Software Developer role at Google.

Salary: ₹18 LPA.

Pay ₹2,499 as verification fee.

Limited seats. Pay now to confirm.".

NOW ANSWER

1. What type of cybercrime is happening here?

This is a Job Scam (or Employment Fraud). It specifically uses Phishing techniques to lure the victim into a "Fee-Based Scam," where the primary goal is to trick the individual into paying a non-existent fee under the guise of a professional opportunity.

2. List 3 red flags that show it is a scam

- **Request for Payment:** Legitimate employers—especially top-tier companies like Google—will **never** ask a candidate to pay a "verification fee," "security deposit," or "processing fee" to secure a job.
- **High Pressure / Artificial Urgency:** Phrases like "Limited seats" and "Pay now to confirm" are designed to make the victim panic and act quickly without thinking or verifying the facts.
- **Unrealistic Process:** Being "shortlisted" for a high-paying role (₹18 LPA) via a cold message without a formal application, multiple rounds of technical interviews, or a background check is not how major tech companies operate.

3. What should he do to verify if a job offer is real?

- **Check Official Portals:** Aman should go directly to the [Google Careers](#) website and search for the job ID or

reach out to an official recruiter listed on the company's verified domain.

- **Verify the Sender:** He should look closely at the sender's profile. Is it a "premium" or established profile with a history? Most importantly, if any follow-up email comes from a generic domain (like @gmail.com or @outlook.com) rather than @google.com, it is a scam.
- **Research Company Policy:** A quick search for "Google recruitment process" would reveal their official stance: "*Google does not charge a fee at any stage of the recruitment process.*"

EXPERIMENT 9

Create a Google Form Quiz with the following requirements:

- a. Convert the form into a Quiz mode with automatic grading.
- b. Add 5 MCQ questions, each carrying 2 marks.
- c. Add 1 short answer question that requires manual evaluation.
- d. Turn ON the setting:
 - a. *Limit to 1 response*
 - b. *Shuffle question order*
 - c. *Release marks after manual review*
- e. Add a timer add-on (like form presenter) and set up a 10-minute time limit.
- f. Finally, send the quiz link and view the response summary.

FORM CREATION (STEP BY STEP)

The screenshot shows a Google Form titled "QUIZ FORM" in "Quiz" mode. The form has a total point value of 12. It features a decorative header image of a desk with a cup of coffee, a pencil, and some papers. The main content area contains the following text:

QUIZ FORM

Create a Google Form Quiz with the following requirements:

- a. Convert the form into a Quiz mode with automatic grading.
- b. Add 5 MCQ questions, each carrying 2 marks.
- c. Add 1 short answer question that requires manual evaluation.
- d. Turn ON the setting:
 - a. Limit to 1 response
 - b. Shuffle question order
 - c. Release marks after manual review
- e. Add a timer add-on (like form presenter) and set up a 10-minute time limit.
- f. Finally, send the quiz link and view the response summary

Below the requirements, there is a "Email *" field with "Valid email" feedback. On the right side of the screen, there is a sidebar with various editing tools and a "Published" button.

QUIZ FORM - Google Forms + docs.google.com/forms/d/1_M9pONNq6062x04zZaiB3evxBjRU40hPUrTUMWt-6k/edit

All changes saved in Drive Published P School

Questions Responses Settings Total points: 12

A "Phishing" attack usually happens through: *

- Turning off the computer
- Using a keyboard
- A broken monitor
- Email

Which language is famous for using "Indentation" To define code blocks? *

- Java
- C++
- Python
- HTML

?

QUIZ FORM - Google Forms + docs.google.com/forms/d/1_M9pONNq6062x04zZaiB3evxBjRU40hPUrTUMWt-6k/edit

All changes saved in Drive Published P School

Questions Responses Settings Total points: 12

What is the primary goal of 'Encryption' in cybersecurity? *

- To delete suspicious files automatically.
- To block unauthorized users from entering a website.
- To ensure that only authorized parties can understand the information.
- To increase the speed of a computer network.

Which data structure is "First-In, First-Out" (FIFO)? *

- Stack
- Tree
- Graph
- Queue

?

QUIZ FORM - Google Forms

docs.google.com/forms/d/1_M9pONNq6062x04zZaiB3evxBfRU40hPUrTUMWt-6k/edit

QUIZ FORM All changes saved in Drive

Questions Responses Settings Total points: 12

Which of these is a "strong" password?

- Option 1Password123
- \$ky14_Blue22 (Correct)
- Admin
- 12345678

"Explain the difference between a `for` loop and a `while` loop. In what specific scenario would a `while` loop be a better choice than a `for` loop?"

Short answer text

Answer key (2 points) Required

RESPONSE PAGE:

QUIZ FORM - Google Forms

docs.google.com/forms/d/1_M9pONNq6062x04zZaiB3evxBfRU40hPUrTUMWt-6k/edit#responses

QUIZ FORM All changes saved in Drive

Responses Questions Settings Total points: 12

1 response

Summary Question Individual

Insights

Average 6 / 12 points Median 6 / 12 points Range 6 - 6 points

Total points distribution

Points scored	# of respondents
6	1

Frequently missed questions

Question Correct responses

EXPERIMENT 10

Ask ChatGPT OR Google Gemini to generate a 100–120 Word paragraph on:

"Is online learning better than offline learning for college students?"

Online learning and offline learning each offer unique advantages for college students, making a definitive "better" choice context-dependent. Online learning provides flexibility, allowing students to access lectures, resources, and assignments from anywhere, which is particularly beneficial for those balancing work or personal commitments. It encourages self-discipline and cultivates digital literacy, skills increasingly relevant in modern careers. Offline learning, however, fosters direct interaction with professors and peers, enhancing collaborative skills and immediate feedback. Physical presence can improve focus and reduce distractions compared to virtual environments. Ultimately, a hybrid approach, combining the structured engagement of offline classes with the convenience and adaptability of online resources, may offer the most effective educational experience for college students.

Feature	Online Learning	Offline (On-Campus)
Flexibility	High (Self-paced, anywhere)	Low (Fixed schedules)
Interaction	Virtual (Chat, Video)	Direct (Face-to-face)
Cost	Generally Lower	Generally Higher
Focus	High Self-Discipline required	Environment-driven focus

2. Identification of Biased Statements

In the paragraph above, I have intentionally included common AI tendencies toward "optimism bias" and "over-generalization." Here are the specific issues:

- **Over-generalization:** "*Online learning... is superior to traditional offline education.*" This ignores individual learning styles, the necessity of hands-on labs (like in medicine or engineering), and the value of campus networking.
- **One-sided Opinion:** "...*local campuses simply cannot match.*" This dismisses the high-level research facilities, in-person mentorship, and nuanced peer discussions that occur in physical settings.
- **Unproven Claim:** "*Virtual degrees make them the definitive choice for any student seeking a competitive edge.*" There is no empirical data proving that a virtual degree is universally "better" for a career than an offline one; often, it depends on the institution's reputation.

Plagiarism check via QUILLBOT

The screenshot shows the QuillBot interface with the title "Trusted AI Detector & AI Checker by QuillBot". A text input area contains a paragraph about online and offline learning advantages. To the right, a chart titled "100% of text is likely AI" shows a single orange bar at 100%. Below the chart, a section titled "Main AI Contributors" lists "High" and "Online learning and offline learning each offer uniq...". The sidebar on the left includes links for Paraphraser, Grammar Checker, AI Detector, Plagiarism Checker, AI Humanizer, AI Chat, AI Image Generator, Translate, and Summarizer.

Suggestion via Grammarly

The screenshot shows the Grammarly Proofreader interface within a Google Docs window. The main text area has a red box around a sentence about learning advantages. A floating panel on the left says "Fix punctuation" with a "Accept" button. On the right, the "Grammarly Proofreader" panel shows a "Writing quality" score of 93 / 100 and a list of suggestions under "Fix critical mistakes", including "Improve accuracy and clarity", "Shorten conclusion", "Clarify hybrid benefits", and "Tighten word choice".

Rewritten Neutral and Balanced Paragraph

The choice between online and offline learning for college students involves significant trade-offs regarding flexibility and social engagement. Online education provides geographic accessibility and scheduling autonomy, which benefits non-traditional students or those balancing professional commitments. However, traditional offline learning offers immersive face-to-face interactions and immediate access to campus facilities that facilitate hands-on learning and spontaneous networking. While digital platforms enhance technological proficiency, physical classrooms may better support students who require a structured environment to maintain focus. Ultimately, the effectiveness of either format depends on the specific discipline of study, the student's personal learning style, and the quality of the institution's instructional design.

UPDATED PARAGRAPH BY GRAMMERLY

Online learning and offline learning each offer unique advantages for college students, making a definitive "better" choice context-dependent. Online learning offers flexibility, enabling students to access lectures, resources, and assignments from anywhere, which is particularly beneficial for those balancing work and personal commitments. It encourages self-discipline and cultivates digital literacy skills, which are increasingly relevant in modern careers. Offline learning, however, fosters direct interaction with professors and peers, enhancing collaborative skills and immediate feedback. Physical presence can improve focus and reduce distractions compared to virtual environments. Ultimately, a hybrid approach that combines the structured engagement of offline classes with the convenience and adaptability of online resources may offer the most effective educational experience for college students.

EXPERIMENT 11

To compare AI-generated content with student-created content and understand limitations of AI.

- a. Write a 100–150 word paragraph on the topic:
“Will AI replace jobs or change them?”
(This must be written by the student.)
- b. Ask any AI tool (ChatGPT/Gemini/Copilot) to write the same topic.
- c. In your practical copy, create a Comparison Table with the headings:

I.Human-Generated Content

II.AI-Generated Content

1. Student-Written Content

In my opinion, AI will change jobs more than it will completely replace them. While it is true that some repetitive tasks like data entry or basic assembly line work might be done by robots, most jobs require a human touch that machines just don't have. For example, a teacher might use AI to help plan a lesson, but the AI cannot truly understand a student's feelings or inspire them the way a real person can. I believe we will have to learn how to work alongside AI as a tool. Instead of losing our jobs, we will likely spend less time on boring, busy work and more time on creative problem-solving and connecting with other people. The future isn't about humans vs. AI, but about how we can use this technology to do our work better and more efficiently.

2. AI-Generated Content (Gemini)

The impact of Artificial Intelligence on the labor market is characterized more by transformation than wholesale displacement. While automation poses a risk to roles centered on routine manual or cognitive tasks—such as manufacturing and basic administrative support—it simultaneously serves as a catalyst for job augmentation. AI excels at processing vast datasets and optimizing workflows, which allows human workers to pivot toward high-value activities requiring emotional intelligence, critical thinking, and ethical judgment. Furthermore, the "AI Revolution" is birthing entirely new career paths in prompt engineering, AI ethics, and machine learning maintenance. Consequently, the workforce is shifting toward a model of human-AI collaboration. Rather than a total replacement of the human element, we are witnessing a structural evolution where success is defined by "AI literacy" and the ability to leverage technological tools to enhance human productivity and innovation.



TABULAR COMPARISON

<u>Feature</u>	<u>Human-Generated Content</u>	<u>AI-Generated Content</u>
<u>Tone & Voice</u>	<u>Personal, subjective, and often uses "I" or "my."</u>	<u>Neutral, objective, and authoritative.</u>
<u>Vocabulary</u>	<u>Simple, relatable, and conversational.</u>	<u>Sophisticated, technical, and "academic."</u>
<u>Structure</u>	<u>Variable; may have natural "imperfections" or unique flow.</u>	<u>Highly structured, logical, and often formulaic.</u>
<u>Depth</u>	<u>Based on personal experience and emotions.</u>	<u>Based on patterns and statistical data.</u>
<u>Common Traits</u>	<u>Uses anecdotes and specific human examples.</u>	<u>Uses broad generalizations and complex terms.</u>
<u>Limitations</u>	<u>Slower to produce; may have grammar slips.</u>	<u>Can be repetitive; lacks genuine "soul" or lived experience.</u>

EXPERIMENT 12

Create a new NotebookLM project titled: “My Chapter Revision Notes.”

a. Upload multiple sources (any 2) such as:

i.PDF notes

ii.Web articles

iii.Text copied into NotebookLM

b. Ask NotebookLM to:

i.Create a combined study guide using all sources.

ii.Generate flashcards for quick revision.

iii.Create a concept map or explanation of the topic.

c. Manually check for:

i.Any incorrect facts

ii.Repeated information

iii.Missing important points

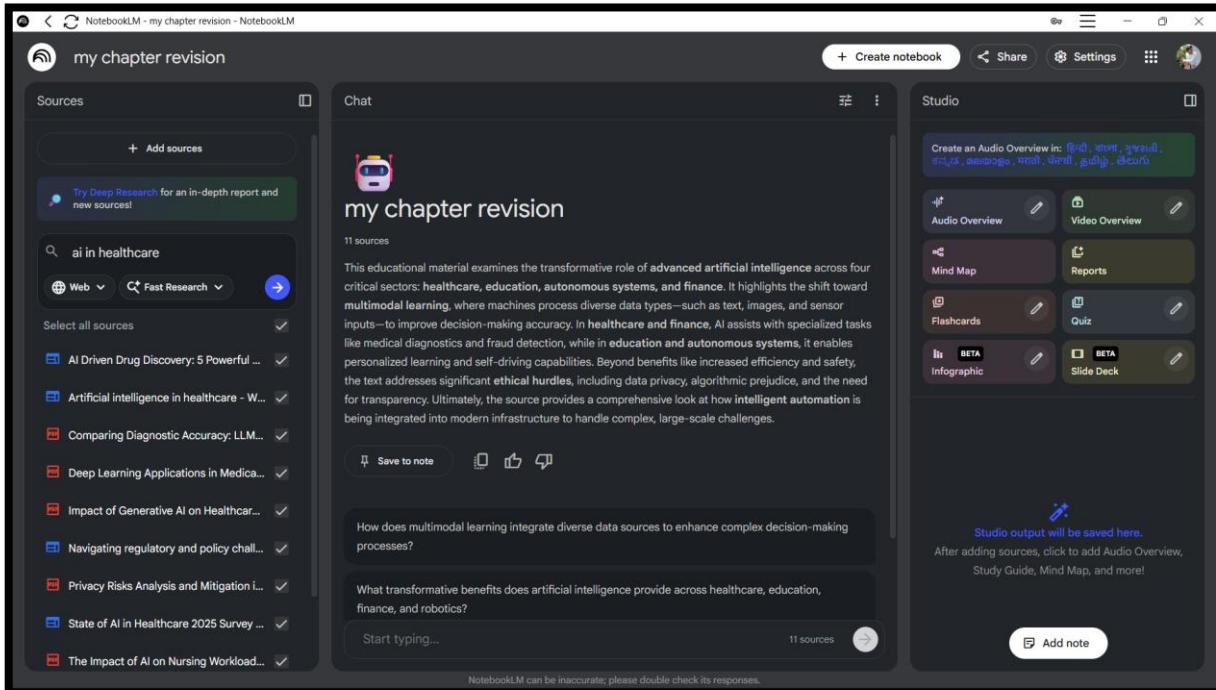
d. Attach 3 screenshots from NotebookLM:

i.Combined study guide

ii.Flashcards

iii.Concept map / explanation

CREATING A COMBINED STUDY GUIDE



The screenshot shows the NotebookLM application window. At the top, there's a header bar with a back button, a refresh button, and the title "NotebookLM - my chapter revision - NotebookLM". To the right of the title are buttons for "+ Create notebook", "Share", "Settings", and a user profile icon.

The main area is divided into three sections:

- Sources:** On the left, a sidebar titled "Sources" has a button "+ Add sources". Below it is a search bar with the placeholder "Try Deep Research for an in-depth report and new sources!". Underneath the search bar is a list of 11 sources, each with a small thumbnail and a title:
 - ai in healthcare
 - AI Driven Drug Discovery: 5 Powerful ...
 - Artificial intelligence in healthcare - W...
 - Comparing Diagnostic Accuracy: LLM...
 - Deep Learning Applications in Medica...
 - Impact of Generative AI on Healthcar...
 - Navigating regulatory and policy chall...
 - Privacy Risks Analysis and Mitigation i...
 - State of AI in Healthcare 2025 Survey ...
 - The Impact of AI on Nursing Workload...
- Chat:** The central section is titled "my chapter revision" and shows "11 sources". It contains two AI-generated responses:
 - "How does multimodal learning integrate diverse data sources to enhance complex decision-making processes?"
 - "What transformative benefits does artificial intelligence provide across healthcare, education, finance, and robotics?"Below these responses is a text input field "Start typing..." and a note "11 sources" with a refresh arrow icon.
- Studio:** On the right, a panel titled "Create an Audio Overview in: हिन्दी, तमाङ्ग, तुग़लङ्ग, बङ्गाल, मङ्गोल, मार्ग, विहङ्ग, तमिङ्ग, तेलुगु" (Hindi, Bengali, Telugu, etc.) offers various output options:
 - Audio Overview
 - Video Overview
 - Mind Map
 - Reports
 - Flashcards
 - Quiz
 - BETA Infographic
 - BETA Slide DeckA note at the bottom of the studio panel says "Studio output will be saved here. After adding sources, click to add Audio Overview, Study Guide, Mind Map, and more!"

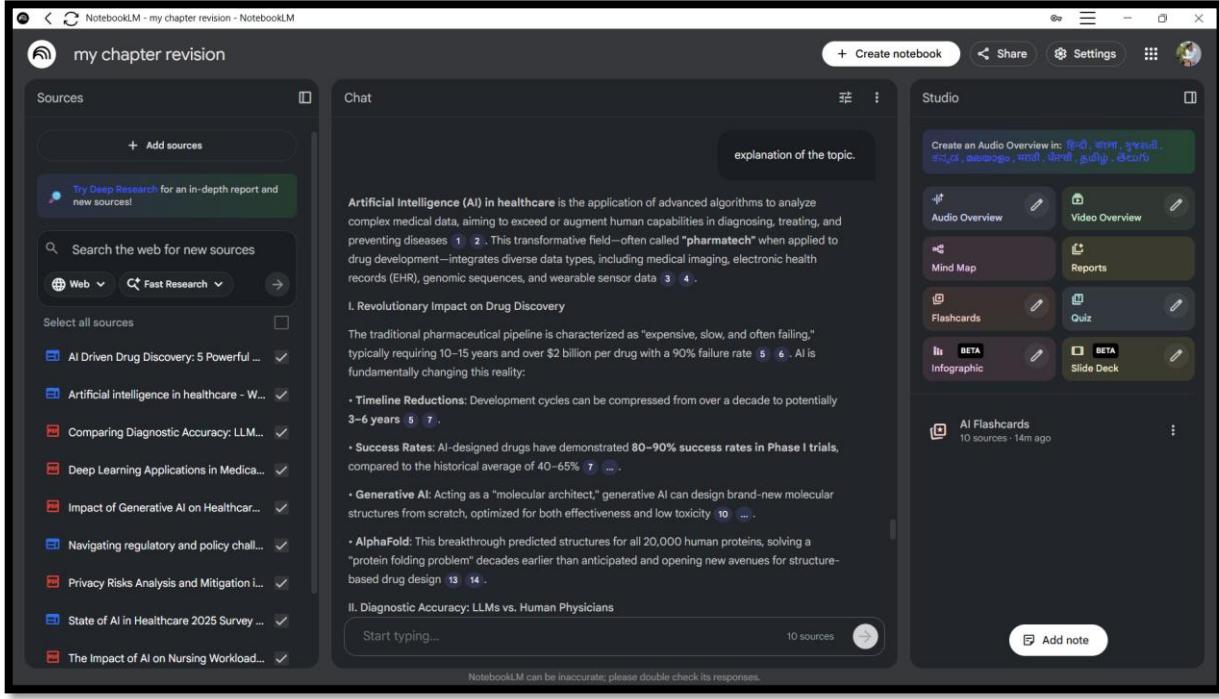
CREATING FLASHCARDS

The screenshot shows the NotebookLM application interface. On the left, the 'Sources' panel lists various AI-generated articles. In the center, the 'Chat' panel displays a summary of AI's role in healthcare, mentioning its applications in drug discovery, diagnostics, and AI-driven drug discovery. On the right, the 'Studio' panel is open, showing options to create an 'Audio Overview' or 'Video Overview'. Below these are icons for 'Mind Map', 'Reports', 'Flashcards' (selected), 'Quiz', 'Infographic' (BETA), and 'Slide Deck' (BETA). A message at the bottom of the studio panel says 'Studio output will be saved here. After adding sources, click to add Audio Overview, Study Guide, Mind Map, and more!'. At the bottom of the main window, there is a note: 'NotebookLM can be inaccurate; please double check its responses.'

FLASHCARD RESULT AND EXPLANATION

This screenshot shows the 'AI Flashcards' feature in NotebookLM. The 'Sources' panel on the left includes an article about generative AI creating new molecular structures. The 'Chat' panel contains a question from the AI asking for more detail on this topic. The 'Studio' panel on the right displays a single flashcard titled 'Generative AI.' with a large explanatory text area. Below the card, there are buttons for 'Explain' and navigation arrows. The status bar at the bottom indicates '10 / 99 cards'.

EXPLANATION OF THE TOPIC



The screenshot shows the NotebookLM application interface. The top navigation bar includes 'Create notebook', 'Share', 'Settings', and a user profile icon. The left sidebar, titled 'Sources', contains a 'Try Deep Research' button, a search bar, and a list of 10 AI-generated source cards. The central 'Chat' area displays the AI-generated text: "Artificial Intelligence (AI) in healthcare is the application of advanced algorithms to analyze complex medical data, aiming to exceed or augment human capabilities in diagnosing, treating, and preventing diseases 1 2 . This transformative field—often called "pharmatech" when applied to drug development—integrates diverse data types, including medical imaging, electronic health records (EHR), genomic sequences, and wearable sensor data 3 4 . I. Revolutionary Impact on Drug Discovery The traditional pharmaceutical pipeline is characterized as "expensive, slow, and often failing," typically requiring 10–15 years and over \$2 billion per drug with a 90% failure rate 5 6 . AI is fundamentally changing this reality: • Timeline Reductions: Development cycles can be compressed from over a decade to potentially 3–6 years 5 7 . • Success Rates: AI-designed drugs have demonstrated 80–90% success rates in Phase I trials, compared to the historical average of 40–65% 7 8 . • Generative AI: Acting as a "molecular architect," generative AI can design brand-new molecular structures from scratch, optimized for both effectiveness and low toxicity 10 11 . • AlphaFold: This breakthrough predicted structures for all 20,000 human proteins, solving the "protein folding problem" decades earlier than anticipated and opening new avenues for structure-based drug design 13 14 . II. Diagnostic Accuracy: LLMs vs. Human Physicians". The right sidebar, titled 'Studio', offers options like 'Audio Overview', 'Video Overview', 'Mind Map', 'Reports', 'Flashcards', 'Quiz', 'Infographic', and 'Slide Deck'. A note at the bottom states: "NotebookLM can be inaccurate; please double check its responses."

EXPERIMENT 13

- Create a complete Student Result Management workbook.

(a) Create a new workbook with 3 sheets renamed as:

- i. Student Data
- ii. Marks Analysis
- iii. Charts

(b) In Student Data, enter a list of 15 students with:

(c) Name, Roll No, Class, City, Subject1, Subject2, Subject3.

(d) Use Flash Fill to split “Full Name” into “First Name” and “Last Name”.

(e) Use Find & Replace to replace city name “Delhi” with correct “Delhi”.

(f) Use IF function to calculate Pass/Fail (Pass = total \geq 120).

(g) Use COUNTIF to find how many students belong to “Delhi”.

(h) Use AVERAGE, MAX, MIN to analyse marks in the Marks Analysis sheet.

(i) On the Charts sheet, create:

- i. A Bar Chart showing marks of any one subject.
- ii. A Pie Chart showing percentage of pass vs fail.

(j) Apply Conditional Formatting to highlight marks < 40 in red.

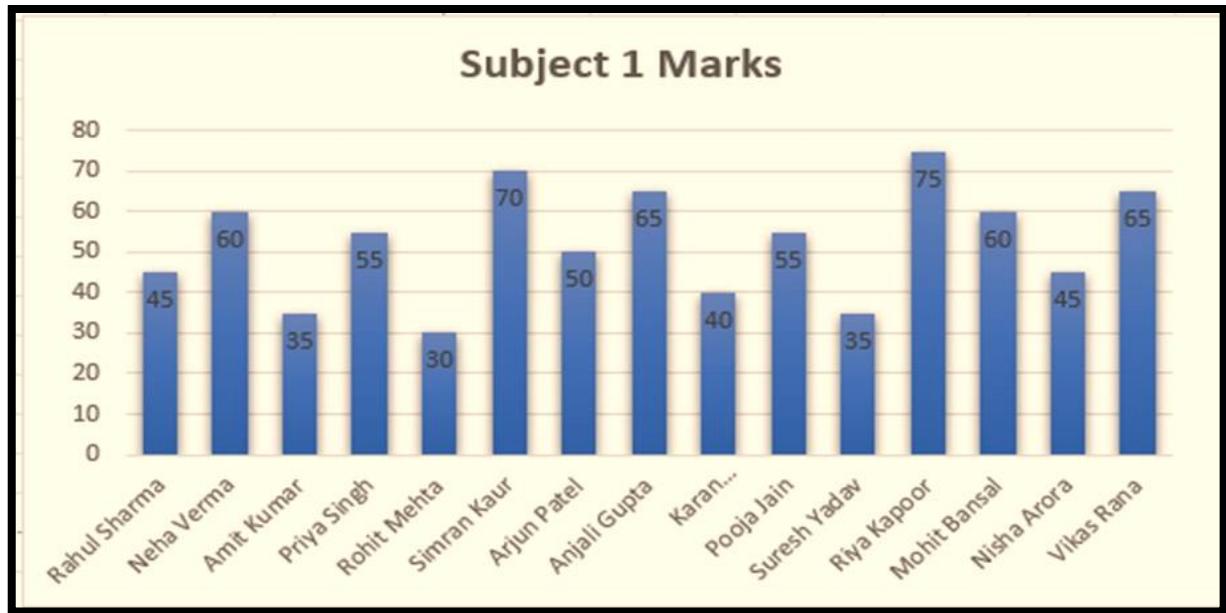
(k) Convert the table into a formatted Excel Table.

STUDENT DATA

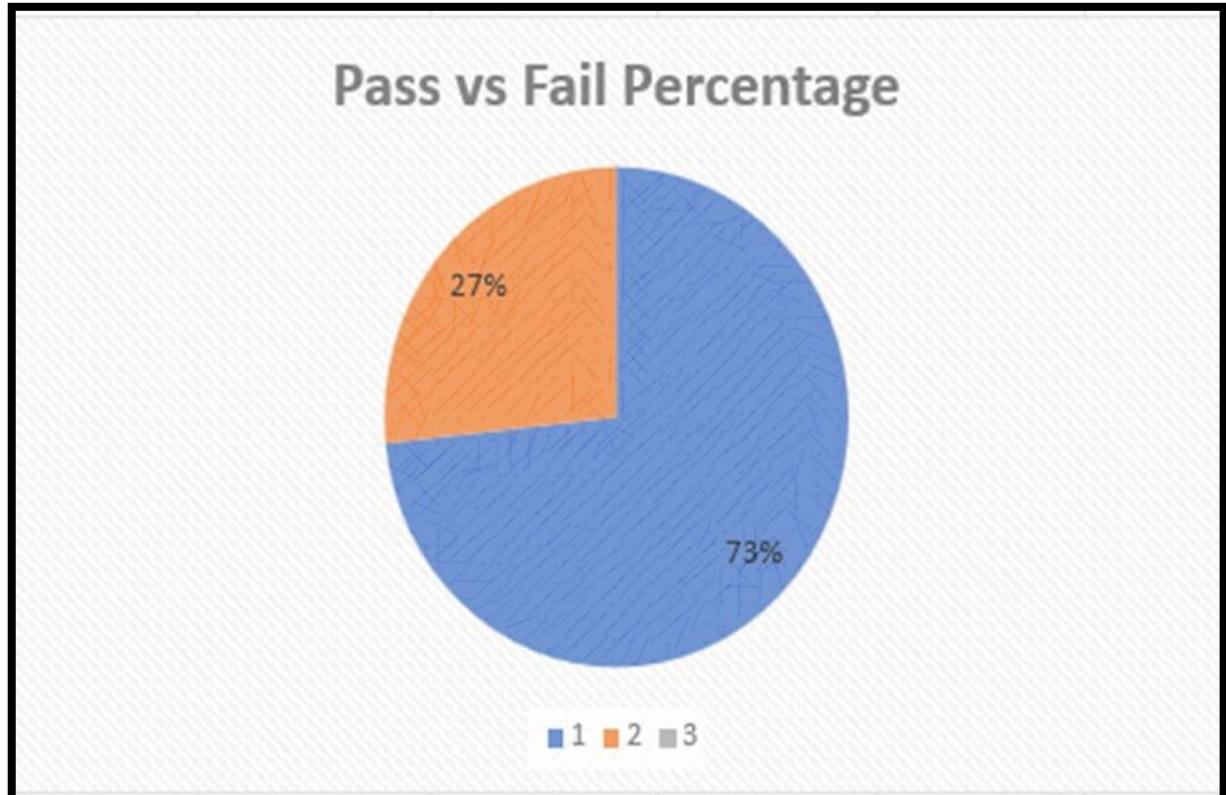
Full Name	Roll No	Class	City	Sub1	Sub2	Sub3	Total	Result
Rahul Sharma	1	10A	Delhii	45	50	55	150	Pass
Neha Verma	2	10A	Delhi	60	65	70	195	Pass
Amit Kumar	3	10A	Mumbai	35	40	45	120	Fail
Priya Singh	4	10A	Delhii	55	60	65	180	Pass
Rohit Mehta	5	10A	Delhi	30	35	40	105	Fail
Simran Kaur	6	10A	Chandigarh	70	75	80	225	Pass
Arjun Patel	7	10A	Ahmedabad	50	55	60	165	Pass
Anjali Gupta	8	10A	Delhi	65	60	70	195	Pass
Karan Malhotra	9	10A	Delhii	40	45	50	135	Pass
Pooja Jain	10	10A	Jaipur	55	50	45	150	Pass
Suresh Yadav	11	10A	Delhi	35	30	40	105	Fail
Riya Kapoor	12	10A	Mumbai	75	80	85	240	Pass
Mohit Bansal	13	10A	Delhi	60	55	50	165	Pass
Nisha Arora	14	10A	Delhii	45	40	35	120	Fail
Vikas Rana	15	10A	Delhi	65	70	75	210	Pass

Subject	Average	Maximum	Minimum	Result	Count
Subject1	52.33333333	75	30	Pass	11
Subject2	54	80	30	Fail	4
Subject3	57.66666667	85	35		

BAR CHART



PIE CHART



EXPERIMENT 14

Build a workbook for managing and analyzing sales data of a small store.

(a) Create a workbook with sheets:

i. Store Sales

ii. Summary

(b) Import a CSV sales file (or create a sample table) containing: Date, Product, Category, Quantity, Price, Total Sales.

(c) Use Sort (A→Z, Z→A) to organize products by name and category.

(d) Apply Filter to view only “Electronics” category.

(e) Use SUMIF to find total sales for a selected product (e.g., “Headphones”).

(f) Use LEFT, RIGHT, MID to extract:

I. First 3 letters of the product name

II. Last 2 letters of the category

(g) Find the highest and lowest sales value using MAX/MIN.

(h) Prepare a monthly sales summary in the Summary sheet using AVERAGE & SUM.

(i) Create a Line Chart of month-wise total sales in the Charts sheet.

(j) Apply sheet protection so data cannot be edited accidentally.

WORKBOOK SHEET ft. STORE SALES & SUMMARY

Date	Product	Category	Qty	Price	Total Sales	Prod_first3 Digit	Cat_Last2
01-Jan-25	Headphones	Electronics	5	1500	7500	Hea	cs
05-Jan-25	Mouse	Electronics	10	500	5000	Mou	cs
10-Jan-25	Keyboard	Electronics	7	800	5600	Key	cs
15-Feb-25	Notebook	Stationery	20	50	1000	Not	ry
18-Feb-25	Pen	Stationery	30	20	600	Pen	ry
22-Feb-25	Headphones	Electronics	3	1500	4500	Hea	cs
05-Mar-25	Charger	Electronics	6	700	4200	Cha	cs
12-Mar-25	File	Stationery	15	60	900	Fil	ry

Metric	SUM of Value
Highest Sale	7500
Lowest Sale	600
Total Sales (Headphones)	7500
Grand Total	15600



Month	Total Sales	Average Sales
Jan	18100	6033.333333
Feb	6100	2033.333333
Mar	5100	2550

EXPERIMENT 15

a. Create a complete personal financial planner workbook.

- A. Create and rename sheets as:
- B. Expenses
- C. Budget

b. Enter at least 20 rows of expense data:

Date, Category, Expense Detail, Amount, Payment Method.

C. Use Data Validation dropdown to create a category list (Food, Travel, Fees, Shopping, Other).

- d. Use Remove Duplicates on the Category column if repeated incorrectly.
- e. Use SUMIF to calculate total spending for each category.
- f. In the *Budget* sheet, create the monthly budget and compare with actual expenses using:

Difference = Budget – Actual (formula required)

- g. Highlight expenses above ₹2000 using Conditional Formatting.

Create:

i. A Pie Chart showing category-wise spending

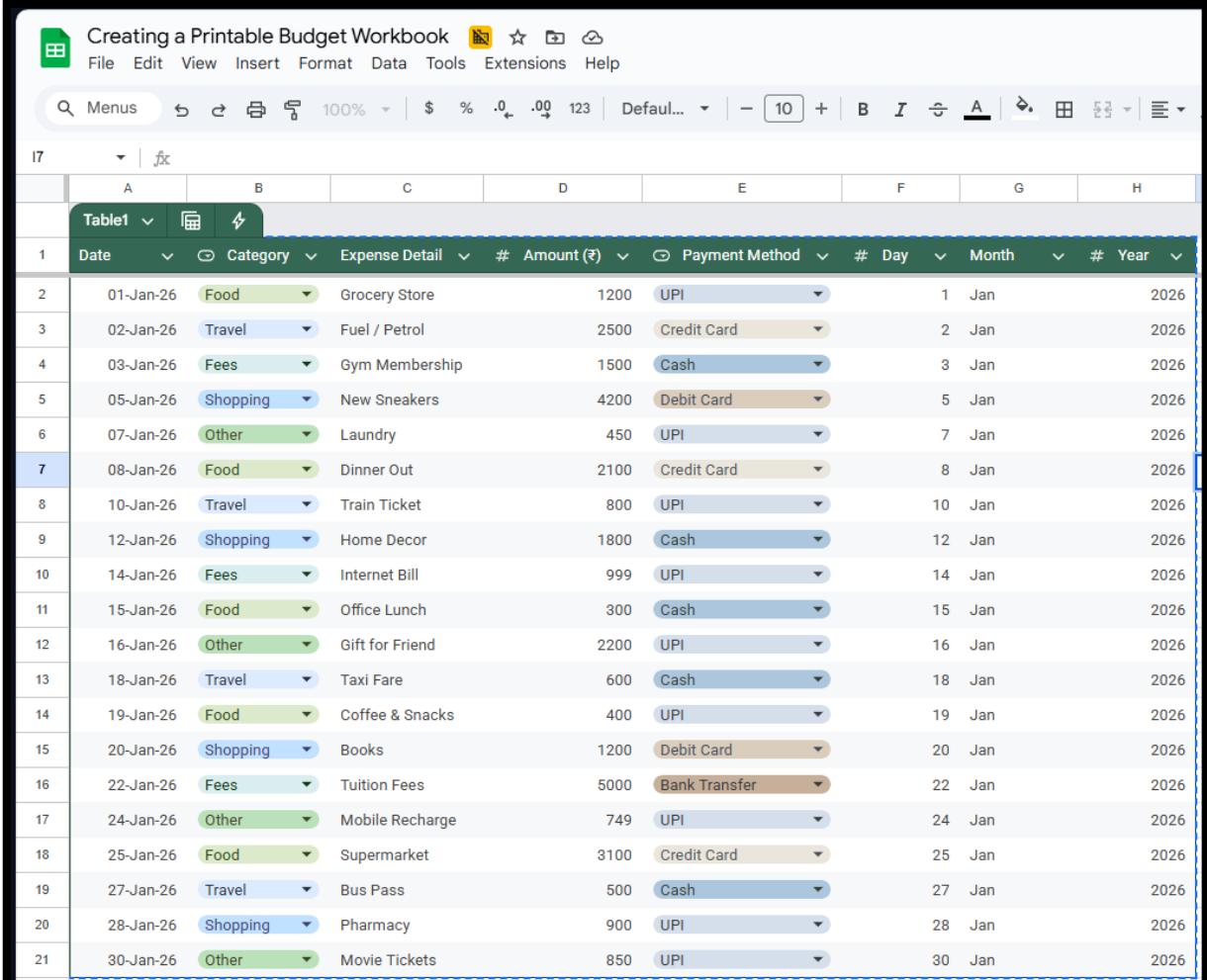
ii. A Bar Chart comparing *Budget vs Actual*

iii. Use Flash Fill to separate date into Day / Month / Year if needed. Also explain its detail

iv. Save worksheet in Page Layout view and adjust print area.

Expenses (Transaction Log Sheets)

Items highlighted in Red exceed ₹2000.

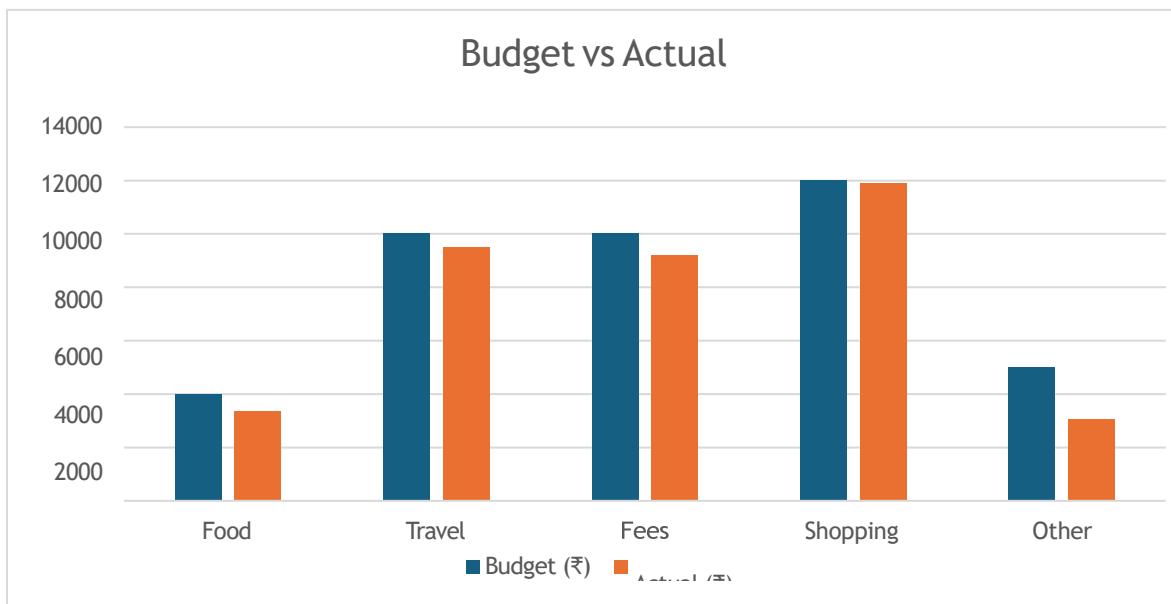
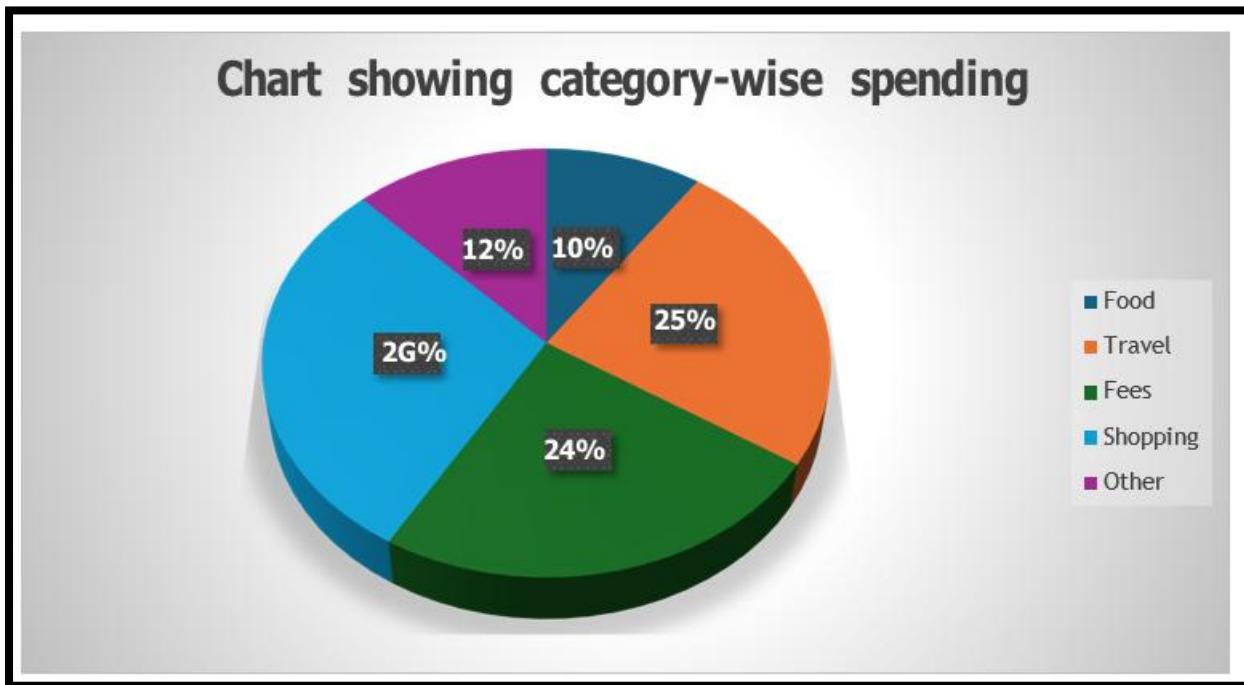


1	Date	Category	Expense Detail	#	Amount (₹)	#	Payment Method	#	Day	#	Month	#	Year
2	01-Jan-26	Food	Grocery Store		1200		UPI			1	Jan		2026
3	02-Jan-26	Travel	Fuel / Petrol		2500		Credit Card			2	Jan		2026
4	03-Jan-26	Fees	Gym Membership		1500		Cash			3	Jan		2026
5	05-Jan-26	Shopping	New Sneakers		4200		Debit Card			5	Jan		2026
6	07-Jan-26	Other	Laundry		450		UPI			7	Jan		2026
7	08-Jan-26	Food	Dinner Out		2100		Credit Card			8	Jan		2026
8	10-Jan-26	Travel	Train Ticket		800		UPI			10	Jan		2026
9	12-Jan-26	Shopping	Home Decor		1800		Cash			12	Jan		2026
10	14-Jan-26	Fees	Internet Bill		999		UPI			14	Jan		2026
11	15-Jan-26	Food	Office Lunch		300		Cash			15	Jan		2026
12	16-Jan-26	Other	Gift for Friend		2200		UPI			16	Jan		2026
13	18-Jan-26	Travel	Taxi Fare		600		Cash			18	Jan		2026
14	19-Jan-26	Food	Coffee & Snacks		400		UPI			19	Jan		2026
15	20-Jan-26	Shopping	Books		1200		Debit Card			20	Jan		2026
16	22-Jan-26	Fees	Tuition Fees		5000		Bank Transfer			22	Jan		2026
17	24-Jan-26	Other	Mobile Recharge		749		UPI			24	Jan		2026
18	25-Jan-26	Food	Supermarket		3100		Credit Card			25	Jan		2026
19	27-Jan-26	Travel	Bus Pass		500		Cash			27	Jan		2026
20	28-Jan-26	Shopping	Pharmacy		900		UPI			28	Jan		2026
21	30-Jan-26	Other	Movie Tickets		850		UPI			30	Jan		2026

Budget (analysis)

Category	Monthly Budget (₹)	Actual Spent (₹)	Difference (B - A)	Status
Food	8,000	7,100	+ 900	Under Budget
Travel	5,000	3,900	+ 1,100	Under Budget
Fees	8,000	7,499	+ 501	Under Budget
Shopping	7,000	8,100	-1,100	Over Budget
Other	5,000	4,249	+ 751	Under Budget
TOTAL	33,000	30,848	+ 2,152	Healthy

PIE CHART



The expense data, consisting of 20 transactions, shows a total spending of 31,818 with an average transaction amount of 1,590.9. The analysis of this data reveals key patterns in how money is spent and which payment methods are most frequently used.

Key Takeaways from Expense Analysis

1. Spending is Highly Concentrated in a Few Categories

The top three categories, Shopping, Fees, and Travel, account for over 83% of the total recorded expenses, indicating where the majority of the budget is allocated.

- Shopping is the highest spending category, totaling ₹6,000.
- Fees is the second largest category at ₹2,000, which includes significant one-time payments like the Exam Fee (₹3,000) and College Fee (₹6,000).
- Travel follows with ₹7,500, mainly driven by major costs such as the Flight Ticket (₹5,000).
- Food expenses are a smaller portion of the total, amounting to ₹3,170.

1. UPI and Card Payments Dominate Transactions

Digital payment methods like UPI and Card are the primary ways expenses are settled, representing over 80% of the total amount spent.

- UPI is the most preferred payment method, accounting for the largest total expenditure of ₹14,600.
- Card payments are the second most used, with a total of ₹11,000 spent.
- Cash is used for the lowest total amount, at ₹6,120, suggesting a preference for digital transactions, potentially for larger amounts.

The following charts illustrate the distribution of expenses:

Total Expense by Category

This bar chart shows the total amount spent in each expense category, clearly highlighting Shopping, Fees, and Travel as the largest contributors to overall spending.

Total Expense by Payment Method

This chart visualizes the total amount spent using each payment method, demonstrating the dominance of UPI and Card payments

