



Estd : 2001

**RN SHETTY TRUST®**  
**RNS INSTITUTE OF TECHNOLOGY**

Autonomous Institution Affiliated to Visvesvaraya Technological University, Belagavi

Approved by AICTE, New Delhi, Accredited by NAAC with 'A+' Grade

Channasandra, Dr. Vishnuvardhan Road, Bengaluru - 560 098

Ph: (080) 28611880, 28611881 URL: [www.rnsit.ac.in](http://www.rnsit.ac.in)

---

**DEPARTMENT OF CSE (AI & ML )**

**AI Tools & Applications (BCIL358C)**

**(As per Autonomous 2024 Scheme Course type- AEC)**

Compiled by

**DEPARTMENT OF CSE (AI & ML)**

**R N S Institute of Technology**

**Bengaluru-98**

**Name:** \_\_\_\_\_

**USN:** \_\_\_\_\_



Estd : 2001

RN SHETTY TRUST®

## RNS INSTITUTE OF TECHNOLOGY

Autonomous Institution Affiliated to Visvesvaraya Technological University, Belagavi

Approved by AICTE, New Delhi, Accredited by NAAC with 'A+' Grade

Channasandra, Dr. Vishnuvardhan Road, Bengaluru - 560 098

Ph: (080) 28611880, 28611881 URL: [www.rnsit.ac.in](http://www.rnsit.ac.in)

## DEPARTMENT OF CSE (AI & ML )

### VISION AND MISSION OF INSTITUTION

#### VISION

**Building RNSIT into a World Class Institution**

#### MISSION

To impart high quality education in Engineering, Technology and Management with a Difference, Enabling Students to Excel in their Career by

1. Attracting quality Students and preparing them with a strong foundation in fundamentals so as to achieve distinctions in various walks of life leading to outstanding contributions
2. Imparting value based, need based, choice based and skill based professional education to the aspiring youth and carving them into disciplined, World class Professionals with social responsibility
3. Promoting excellence in Teaching, Research and Consultancy that galvanizes academic consciousness among Faculty and Students
4. Exposing Students to emerging frontiers of knowledge in various domains and make them suitable for Industry, Entrepreneurship, Higher studies, and Research & Development
5. Providing freedom of action and choice for all the Stake holders with better visibility

#### VISION OF THE DEPARTMENT

Empowering AI & ML Engineers to seamlessly integrate society and technology

#### MISSION OF THE DEPARTMENT

M1: To Inculcate, strong mathematical foundations as applied to AIML domain.

M2: To Equip AIML graduates with skills to meet Industrial and Societal challenges.

M3: To Foster ethical values & engineering norms and standards in AIML graduates.

## **Disclaimer**

The information contained in this document is the proprietary and exclusive property of RNS Institute except as otherwise indicated. No part of this document, in whole or in part, may be reproduced, stored, transmitted, or used for course material development purposes without the prior written permission of RNS Institute of Technology.

The information contained in this document is subject to change without notice. The information in this document is provided for informational purposes only.

## **Trademark**



Estd : 2001

## **Edition: 2025- 26**

## **Document Owner**

The primary contact for questions regarding this document is:

Author(s):

1. Dr. Usha M
2. Dr. Mamatha S K
3. Ms. Chaithra S

Department: **CSE (AI & ML)**

Contact email ids : [usha.m@rnsit.ac.in](mailto:usha.m@rnsit.ac.in)

## COURSE OUTCOMES

**Course Outcomes:** At the end of this course, students are able to:

CO1	Apply Generative AI tools such as ChatGPT, Canva, and Gamma.app to create structured content, simulations, and assessments.
CO2	Transform raw information into well-structured academic or professional outputs using AI tools like Canva Docs and Gamma.app.
CO3	Design precision prompts to generate reliable scholarly content and evaluation questions using advanced prompting strategies.
CO4	Utilize AI-powered platforms (e.g., Elicit, Consensus, Litmaps) to enhance productivity in research ideation, literature review, and visualization.
CO5	Create adaptive and personalized learning pathways using AI tools to support differentiated instruction and learner engagement.

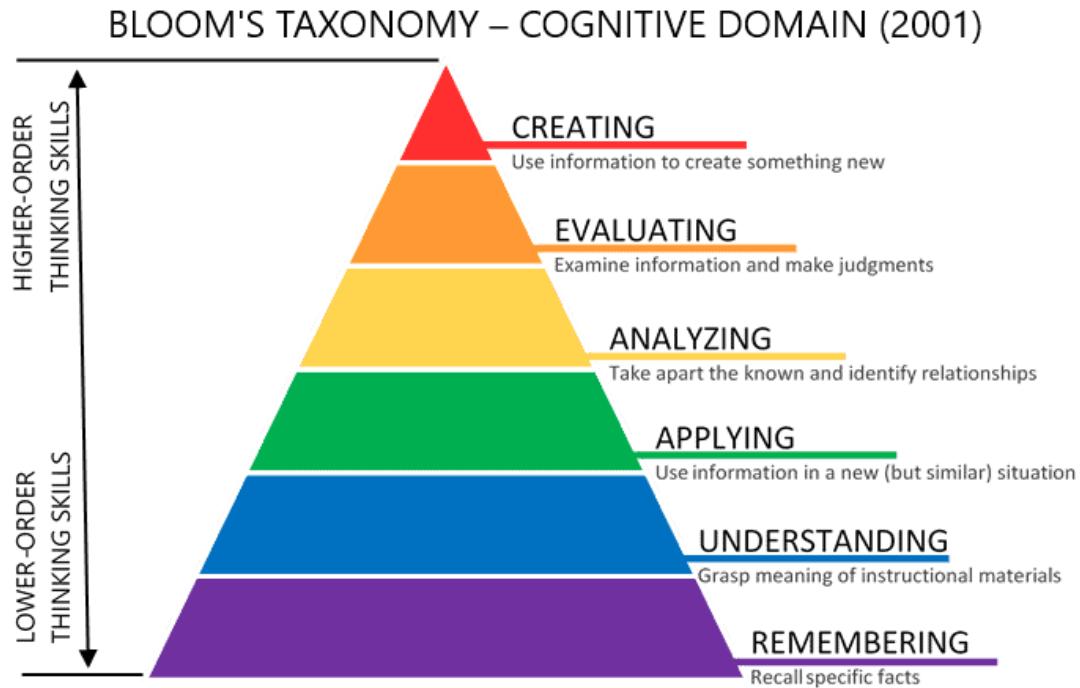
### COs and POs Mapping of lab Component

CO No.	Bloom's Level (RBT)	WK	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1	L3-Apply	WK1, WK2, WK4, WK6	3	2	1	-	2	-	-	-	2	3	-	3	3	-
CO2	L3- Apply	WK2, WK3, WK4, WK6	2	3	3	2	1	-	-	-	2	3	-	3	3	-
CO3	L3-Apply	WK2, WK4, WK8	3	3	3	-	-	-	-	-	3	3	-	3	3	-
CO4	L2-Analyze	WK1, WK2, WK4, WK6, WK8	3	3	2	3	3	-	2	-	2	3	3	3	3	3
CO5	L4-Create	WK4, WK5, WK6, WK7, WK9	2	2	3	2	3	3	3	3	3	3	-	3	3	3

### **Mapping of 'Graduate Attributes' (GAs) and 'Program Outcomes' (POs)**

<b>Graduate Attributes (GAs) (As per Washington Accord Accreditation)</b>	<b>Program Outcomes (POs) (As per NBA New Delhi)</b>
Engineering Knowledge	Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to solve complex engineering problems.
Problem Analysis	Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions.
Design/Development of solutions	Design solutions for complex engineering problems and design system components or processes meeting specified needs.
Conduct Investigation of complex problems	Use research-based knowledge and research methods including design of experiments, analysis, and interpretation of data, and synthesis of information.
Engineering Tool Usage.	Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools for engineering activities.
The Engineer and The World.	Apply reasoning informed by contextual knowledge to assess societal, health, safety, legal, and cultural issues relevant to professional practice.
Ethics	Understand the impact of engineering solutions in societal and environmental contexts for sustainable development.
Individual and Collaborative Teamwork	Apply ethical principles and commit to professional ethics and responsibilities in engineering practice
Communication	Communicate effectively on complex engineering activities with peers and society, through reports, presentations, and documentation.
Project management & finance	Demonstrate knowledge and understanding of engineering and management principles and apply these to manage projects.

## ***REVISED BLOOMS TAXONOMY (RBT)***



## AI TOOLS & APPLICATIONS LABORATORY

### INTERNAL EVALUATION SHEET

<b>EVALUATION (MAX MARKS 20)</b>			
<b>REGULAR EVALUATION A</b>	<b>RECORD B</b>	<b>PRACTICAL TEST C</b>	<b>TOTAL MARKS A+B+C</b>
10	10	20+10	50

<b>A1: REGULAR LAB EVALUATION WRITE UP+ EXECUTION RUBRIC (MAX MARKS 05)</b>	
<b>Sl. No</b>	<b>Parameters</b>
a	<b>Understanding of problem</b> statement while designing and implementing the program
b	<b>Writing program-</b> Program handles all possible conditions
c	<b>Result and documentation</b>
c	<b>Design, implementation and demonstration</b> - Program follows syntax and semantics
d	<b>Result and documentation</b> All expected results are demonstrated successful, all

<b>A2: REGULAR LAB EVALUATION VIVA RUBRIC (MAX MARKS 05)</b>	
<b>Sl.No.</b>	<b>Parameter</b>
a	<b>Conceptual understanding of program-</b> Answers most of the viva questions asked

<b>B1: RECORD EVALUATION RUBRIC (MAX MARKS 10)</b>	
<b>Sl. No.</b>	<b>Parameter</b>
a	<b>Documentation</b> Meticulous record writing including program, comments and expected output as per the guidelines mentioned (10 marks)

<b>TEST #</b>	<b>Write up 8</b>	<b>Execution 35</b>	<b>Viva 7</b>	<b>Total 50</b>	<b>Avg. 50</b>	<b>Final 50</b>
TEST-1						
TEST-2						

<b>FINAL MARKS OBTAINED</b>			
<b>A: REGULAR EVALUATION (10)</b>		<b>TOTAL (A+B+C)</b>	
<b>B: RECORD (10)</b>			
<b>C: TEST (30)</b>		/50	<b>Signature of Lab In Charge:</b>

## ***REGULAR LAB EVALUATION (MAX MARKS 5)***

<b>Program #</b>	<b>Date of Execution</b>	<b>Lab programs</b>	<b>A1 Writeup+ Execution (5)</b>	<b>A2 Viva (5)</b>	<b>Total 10</b>	<b>Teacher Signature</b>
<b>1</b>		Create high quality, structured course content Using Generative AI tools (Use ChatGPT).				
<b>2</b>		Demonstrate the Canvas mode in ChatGPT.				
<b>3</b>		Demonstrate the usage of Notion (knowledge management platform) which is a smart, flexible Google Doc with extra features such as Nested pages, Toggle sections, Visual blocks (tables, images, embeds), Easy rearrangement.				
<b>4</b>		Demonstrate the use of Canva Docs and Canva Magic Tools.				
<b>5</b>		Demonstrate the use of Magic Suite-Magic Eraser/Replace, Magic transform, etc.				
<b>6</b>		Demonstrate the use of Gamma.app-AI-Powered presentation builder.				
<b>7</b>		Generate Questions from Content (CTRL Method). CTRL is a powerful method for precision prompting.				
<b>8</b>		Demonstrate the Parsons Method for Interactive Problem Statements.				
<b>9</b>		Demonstrate the usage of AI Tools for Creating and Delivering Tests.				
<b>10</b>		Demonstrate the use of AI-Driven Research Ideation (ChatGPT + Search)				

<b>11</b>		Deploy Elicit (elicit.com) for Rapid Literature Discovery.				
<b>12</b>		Using Consensus for Quick Expert Insights (consensus.app).				
<b>13</b>		Visualizing Research Connections with Litmaps (app.litmaps.com)				
<b>14</b>		Explore how Generative AI can be applied in education to enable personalised learning experiences and support learners across various tasks. Use AI Tools such as Khanmigo, QuestionWell				

**10 —**

### **ASSESSMENT DETAILS (Both CIE and SEE)**

<b>Assessment Type</b>	<b>Maximum Marks</b>	<b>Minimum Passing Marks</b>	<b>Evaluation Details</b>
CIE Practical (A)	30	-	Marks awarded for Weekly Conduction of Experiments and Submission of Laboratory records, scaled to 30 marks.
CIE Practical Test (B)	20	-	Average of marks of Two tests, each conducted for 100 marks covering all experiments, scaled to 20.
<b>Total CIE Practical (A+B)</b>	<b>50</b>	<b>20</b>	<b>Sum of Marks of Experiments, Record and Test shall be CIE marks awarded for a maximum of 50.</b>
<b>SEE (C)</b>	<b>50</b>	<b>20</b>	<b>SEE is a lab exam, conducted for 100 marks and scaled down to 50 marks. Exam duration shall be for 3 hours.</b>
<b>CIE + SEE (A+B+C)</b>	<b>100</b>	<b>40</b>	<b>Final marks shall be the sum of marks scored in Components A, B and C.</b>
<ul style="list-style-type: none"> <li><b>The minimum marks to be secured in CIE is 20 (40%) out of allotted 50 marks to appear for SEE.</b></li> </ul>			

## Program List

<b>Sl. No</b>	<b>Week No</b>	<b>Program Title</b>	<b>CO's</b>	<b>WK Level</b>
1	Week 1	Create high quality, structured course content Using Generative AI tools (Use ChatGPT).		
2	Week 2	Demonstrate the Canvas mode in ChatGPT.		
3	Week 3	Demonstrate the usage of Notion (knowledge management platform) which is a smart, flexible Google Doc with extra features such as Nested pages, Toggle sections, Visual blocks (tables, images, embeds), Easy rearrangement.		
4	Week 4	Demonstrate the use of Canva Docs and Canva Magic Tools.		
5	Week 5	Demonstrate the use of Magic Suite-Magic Eraser/Replace, Magic transform, etc.		
6	Week 6	Demonstrate the use of Gamma.app-AI-Powered presentation builder.		
7	Week 7	Generate Questions from Content (CTRL Method). CTRL is a powerful method for precision prompting.		
8	Week 8	Demonstrate the Parsons Method for Interactive Problem Statements.		
9	Week 9	Demonstrate the usage of AI Tools for Creating and Delivering Tests.		
10	Week 10	Demonstrate the use of AI-Driven Research Ideation (ChatGPT + Search)		
11	Week 11	Deploy Elicit (elicit.com) for Rapid Literature Discovery.		
12	Week 12	Using Consensus for Quick Expert Insights (consensus.app).		
13	Week 13	Visualizing Research Connections with Litmaps (app.litmaps.com)		
14	Week 14	Explore how Generative AI can be applied in education to enable personalised learning experiences and support learners across various tasks. Use AI Tools such as Khanmigo, QuestionWell		
15	Week 15	Lab Test		

## **Introduction**

### **Understanding Large Language Models (LLMs)**

Large Language Models are advanced AI systems trained on vast amounts of text data. They can understand, generate, and process human language with remarkable fluency and coherence.

- Foundation: Deep learning architectures, primarily transformers.
- Scale: Billions of parameters, trained on petabytes of text.
- Capabilities: Text generation, translation, summarisation, question answering, and more.

### **Large language model use cases**

LLMs are redefining business processes and have proven their versatility across a myriad of use cases in many industries.

- Text generation: LLMs can do all sorts of content creation tasks like drafting emails, blog posts or legal memos in response to prompts.
- Text summarization: LLMs can summarize long articles, news stories, research reports, corporate documentation and customer history into thorough texts tailored in length to a desired output format and style.
- AI assistants: Chatbots powered by conversational AI can perform question answering and provide detailed information as a part of an integrated, real-time customer care solution.
- Code generation: Code assist platforms aid developers in building applications, finding errors in code and uncovering security issues in multiple programming languages, even translating between them.
- Sentiment analysis: Customer tone is analyzed in order to better understand customer feedback at scale.
- Language translation: Automated translation provides wider coverage to organizations across languages and geographies with fluent translations and multilingual capabilities.
- Reasoning: LLMs can solve math problems, plan multi-step processes and explain complex concepts in simpler terms.

### **Core Principles of Prompt Construction**

Crafting effective prompts is an art and a science, ensuring LLMs deliver precise and relevant outputs.

Here are some strategies for crafting effective prompts:

- **Be Clear and Specific:**

Avoid ambiguity by providing precise instructions on the task, desired outcome, and any specific elements you need.

- **Provide Context:**

Give the AI necessary background information, facts, or documents to help it understand the situation and generate a relevant response.

- **Use Positive Instructions:**

Instead of saying what not to do, state what you want the AI to do. For example, say "use simple language" rather than "don't use jargon".

- **Specify Format and Tone:**

Clearly state the desired output format (e.g., bulleted list, formal email, friendly tone) to guide the AI's style and structure.

- **Offer Examples (Few-Shot Prompting):**

When possible, provide a few examples of the input-output pairs you're looking for to demonstrate the exact style or content desired.

- **Give the AI a Role:**

Tell the AI to "act as if" it is a particular person or expert (e.g., "Act as a financial advisor") to help tailor its answers.

- **Iterate and Refine:**

Prompt engineering is often a conversation; start with an initial prompt, then review the response and adjust your prompt accordingly to improve the results.

- **Keep Prompts Focused:**

For complex goals, break them into smaller, more manageable requests rather than overloading a single prompt with multiple tasks.

## **Types of Prompts**

- Instruction Prompts
- Question Prompts
- Contextual Prompts
- Role-based Prompts
- Multi-step Prompts
- Creative Prompts
- Output-Format Prompts
- Constraint Prompts

- Chain-of-Thought Prompts
  - Meta-Prompt
- 1) Instruction prompting is a fundamental technique in AI prompt engineering that involves providing clear, specific and structured natural language instructions to a generative AI model, particularly large language models (LLMs), to guide them in performing complex tasks accurately and efficiently.
  - 2) Prompt questions are clear, concise questions designed to spark thought, conversation, or writing on a specific topic, serving as conversation starters, journaling prompts, or interview questions. They can range from broad inquiries about personal values and experiences to specific, closed-ended questions for clarity.
  - 3) Contextual Prompting is a prompt engineering technique where you provide the AI with relevant background information, specific instructions, tone and objectives within your prompt. This ensures the AI generates responses that are not just accurate but also tailored to your needs and context.
  - 4) Role-based prompts are a prompt engineering technique where you explicitly instruct an AI to assume a specific persona or character when generating a response. By defining a role, you can control the output's tone, style, and content to be more relevant, specialized, and context-aware. This is also known as persona prompting or "act-as" prompting.
  - 5) Multi-step prompts break down complex tasks into a series of smaller, sequential steps, guiding an AI model toward a more accurate and structured final output. This technique prevents the AI from becoming overloaded by a single, lengthy request, leading to more reliable and detailed results.
  - 6) Creative prompts provide a starting point for stories, essays, or other creative works by offering unique ideas, scenarios, or constraints. Examples include writing from an object's perspective, creating a different version of a classic story, imagining a superpower, describing an important memory, or using a specific first or last line of a story as a jumping-off point.
  - 7) An output-format prompt is a type of instruction that explicitly tells an AI language model how to structure or present its response.
  - 8) A constraint prompt provides an AI with specific rules, limits, or boundaries that define how it should generate a response. By narrowing the creative field, constraints help produce focused, consistent, and useful output.
  - 9) Chain of thought (CoT) is a prompt engineering technique that enhances the output of large language models (LLMs), particularly for complex tasks involving multistep reasoning. It facilitates

problem-solving by guiding the model through a step-by-step reasoning process by using a coherent series of logical steps.

- 10) A "meta-prompt" is a prompt that generates or refines other prompts, rather than asking a Large Language Model (LLM) to perform a task directly. This technique guides the model on *how* to think about a problem, providing a structural template for a category of tasks, not just specific examples.

## **PROGRAM 1**

Create high quality, structured course content Using Generative AI tools (Use ChatGPT). Example: Create a lecture on looping statements in Python, World War II, etc.

### **Objective:**

To generate structured lecture content on a given topic using ChatGPT and demonstrate Canvas mode for course documentation.

### **Software/Tools Required:**

- ChatGPT (Generative AI tool)
- ChatGPT Canvas Mode

### **Procedure / Steps:**

Open ChatGPT.

Give a prompt like "*Create a structured lecture of 1hour on Looping statements in Python' for first-year UG B.E Computer Stream students. Also Include examples, syntax, and solved exercises*"

Review the structured response (introduction, syntax, examples, summary).

Use Canvas mode to edit, add exercises, and format as a manual.

Save/export the document for use in teaching.

## **OUTPUT**

The screenshot shows a ChatGPT interface with the following content:

**Lecture Plan (Duration: 1 Hour)**

Topic: Looping Statements in Python  
Target Audience: I Year B.E. (Computer Stream)  
Duration: 60 Minutes  
Teaching Aids: Whiteboard / Projector, Python IDE (IDLE / VS Code / Jupyter)

---

**Learning Objectives**

By the end of this lecture, students will be able to:

1. Understand the need for loops in programming.
2. Explain the types of looping statements in Python.
3. Use `for` and `while` loops effectively.
4. Apply loop control statements (`break`, `continue`, `pass`).
5. Write simple programs using loops.

At the bottom, there is a search bar with the placeholder "Ask anything" and a "Share" button.

## **PROGRAM 2**

Demonstrate the Canvas mode in ChatGPT

Example 1: Show the Interactive Editing of Documents using prompt-based modifications. Apply a prompt like: "Make this shorter", "Add an analogy here", "Convert this into bullet points".

Example 2: Write a paragraph on if-else statements, select it, and prompt: "Explain this with a real-life analogy for beginners."

### **Objective:**

To demonstrate interactive editing of documents using ChatGPT prompts.

### **Software/Tools Required:**

- ChatGPT

### **Procedure / Steps:**

Open chatgpt and type / and select canvas

Input a paragraph (e.g., explanation of if-else statements).

Highlight the paragraph in ChatGPT Canvas.

Use the edit icon in right bottom and select from the different options.

Apply prompts like: 'Make this shorter', 'Elaborate it', 'Add a real-life analogy', 'Convert into bullet points'.

Observe changes in real time.

The screenshot shows a web browser window with two tabs open. The left tab is titled "ChatGPT" and contains a message from the AI: "elaborate". The right tab is titled "Python Lists Intro" and displays a detailed explanation of Python lists. The ChatGPT interface includes a sidebar with icons for user profile, history, search, and more. The Python Lists page has sections for "Syntax", "Example", and "Output", along with a "Reading level" button.

ChatGPT

elaborate

Python Lists Intro

Ask ChatGPT | B I Aa

## Python Lists

A list in Python is a fundamental and flexible collection data type that can store multiple items together within a single variable. It acts like a container or a dynamic array where you can add, remove, or modify items at any time. Lists maintain the order in which items are inserted (**ordered**), allow changes after creation (**mutable**), and can hold elements of various **data types**, including integers, strings, floats, or even other lists.

Syntax:

```
my_list = [element1, element2, element3]
```

Example:

```
fruits = ["apple", "banana", "cherry"]  
print(fruits)
```

Output:

```
['apple', 'banana', 'cherry']
```

## Python Lists

A **list** in **Python** is a **fundamental** and **flexible** collection **data type** that can store **multiple** **items** together within a single **variable**. It acts like a **container** or a **dynamic array** where you can **add**, **remove**, or **modify** items at any time. Lists maintain the **order** in which items are inserted (**ordered**), allow **changes** after creation (**mutable**), and can hold elements of various **data types**, including **integers**, **strings**, **floats**, or even other **lists**.

### Syntax:

```
my_list = [element1, element2, element3]
```

### Example:

```
fruits = ["apple", "banana", "cherry"]  
print(fruits)
```

### Output:

```
['apple', 'banana', 'cherry']
```

### **PROGRAM 3**

Demonstrate the usage of Notion (knowledge management platform) which is a smart, flexible Google Doc with extra features such as Nested pages, Toggle sections, Visual blocks (tables, images, embeds), Easy rearrangement.

Example : Create or demonstrate how to:

- Paste GPT-generated content into Notion
- Break it into pages or collapsible sections
- Prepare content for sharing or lesson delivery

### **Objective:**

To use Notion as a smart and flexible knowledge management platform for organizing AI-generated content.

### **Tools Required:**

- Notion account (web: <https://www.notion.so> or desktop/mobile app).

### **Theory:**

Notion is an all-in-one knowledge management and collaboration tool. Unlike a regular Google Doc, it provides:

- Nested Pages (create pages within pages).
- Toggle Sections (collapse/expand content).
- Visual Blocks (tables, images, embeds).
- Drag-and-drop rearrangement for better organization.

### **Step-by-Step Procedure:**

#### **Step 1: Create a New Workspace**

1. Log in to Notion.
2. On the left sidebar, click “+ New Page”.
3. Give your workspace a title (e.g., “*Python Programming Notes*”).

#### **Step 2: Paste GPT-generated Content**

1. Copy the content you generated using ChatGPT (for example, “*Lecture notes on Python Loops*”).
2. Paste it directly into the Notion page.
3. Notion automatically formats text into blocks (paragraphs, bullet lists, headings).

#### **Step 3: Break Content into Pages or Sections**

1. Highlight a heading (e.g., “*For Loop in Python*”) and click Turn into → Page.
  - o This creates a nested page inside your main workspace.
2. Alternatively, for smaller parts (e.g., examples), use a Toggle List:
  - o Type /toggle → Enter your text (e.g., “*Real-life Example*”).
  - o Students can expand/collapse these sections.

#### Step 4: Add Visual Blocks

1. Type /table to insert a table for comparing concepts.
2. Use /image or /embed to insert diagrams, YouTube tutorials, or infographics.
3. Rearrange blocks by simply dragging them.

#### Step 5: Prepare for Sharing or Lesson Delivery

1. Click on Share (top right).
2. Enable Share to Web to generate a public link.
3. You can also invite collaborators (students/teachers) via email with view/edit permissions.
4. Export the content as PDF/Markdown/HTML if needed.

The screenshot shows a Notion workspace interface. On the left is a vertical sidebar with the following sections and items:

- Search**
- Home**
- Notion AI** (marked as **New**)
- Inbox**
- Private** section containing:
  - Python Programming** (highlighted)
  - Python Programming N...**
  - 2. The for Loop**
  - New database**
  - Getting started in Notion**
- Teams** section containing:
  - Mamatha S.K's Workspa...**
  - Engineering Docs**
  - + Add new**
- Settings**
- Marketplace**

At the bottom of the sidebar are icons for Undo, Redo, Find, Copy, Paste, and Help.

The main content area has the following structure:

# Python Programming

**Introduction to Python Programming**

## Python Programming Basics

Python is a high-level, interpreted programming language that is widely appreciated for its simplicity, readability, and flexibility. It was created by Guido van Rossum in 1991 and was named after the famous comedy show “Monty Python’s Flying Circus,” not the snake. Over the years, Python has become one of the most popular programming languages across the world and is consistently ranked among the top three languages because of its ease of use and wide range of applications.

The language has several key features that make it unique. Python is easy to learn and has a syntax that is very close to English, which makes it beginner-friendly. It is an interpreted language, meaning that code can be executed directly without compilation, and it works across multiple platforms such as Windows, Mac, and Linux. Being open-source, Python is free to use and supported by a very large community. Another important feature is its extensive library support—popular libraries such as NumPy, Pandas, TensorFlow, and Django enable developers to work in fields ranging from data science and artificial intelligence to web development and automation. Python also supports multiple programming paradigms, including object-oriented and functional programming, which makes it versatile.

[Go to Settings to activate Windows](#)

The screenshot shows the left sidebar of a Notion workspace. At the top are links for 'Home', 'Notion AI' (with a 'New' button), and 'Inbox'. Below these are sections for 'Private' (containing 'Python Programming' which is highlighted in grey), 'Teamspaces' (containing 'Mamatha S.K's Workspace...', 'Engineering Docs', and '+ Add new'), and 'Settings' and 'Marketplace'.

# Python Programming Basics

Python is a high-level, interpreted programming language that is widely appreciated for its simplicity, readability, and flexibility. It was created by Guido van Rossum in 1991 and was named after the famous comedy show "Monty Python's Flying Circus," not the snake.

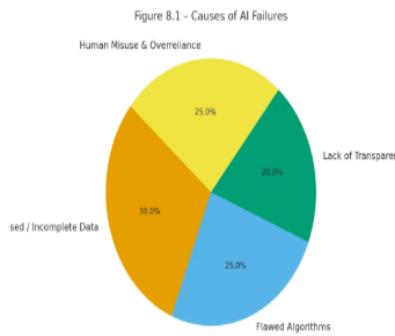
## ▼ Real life examples

Give Python programming examples

### ▼ Looping statements

For loop

While loop



The language has several key features that make it unique. Python is easy to learn and has a syntax that is very close to English, which makes it beginner-friendly. It is an interpreted language, meaning that code can be executed directly without compilation, and it works across multiple platforms such as Windows, Mac, and Linux. Being open-source, Python is free to use and supported by a very large community. Another important feature

## Expected Output:

- A Notion workspace with:
  - GPT content neatly organized.
  - Nested pages for topics.
  - Toggle sections for collapsible examples.
  - Visual blocks for enhanced learning.
- Final shareable lesson or teaching material.

## **PROGRAM 4**

Demonstrate the use of Canva Docs and Canva Magic Tools. Example: Demonstrate how to take the AI-generated lesson (on looping Statements in Python) and copy it directly into Canva Docs, which is Canva's version of a dynamic document editor. Paste GPT/Notion Content into Canva Docs using Canva Magic Tools. Create a visually enhanced handout or lesson packet that students can download, read on mobile, or print.

After generating the topic breakdown with ChatGPT:

- Use Canva Docs to format each cause as a section
- Add relevant photos from Canva Elements
- Include a “Key Takeaway” block after each section
- Attach a short 2-question quiz at the end

### **Objective :**

To create a visually enhanced lesson packet on Python Loops by copying AI-generated/Notion content into Canva Docs and enhancing it with Canva Magic Tools.

### **Tools Required:**

- Canva Account → <https://www.canva.com>
- Canva Docs & Canva Magic Tools (Magic Write, Magic Design, Canva Elements)

### **Theory :**

- Canva Docs: Canva's version of a document editor, but more powerful and visual-first.
- Magic Tools: AI-powered features in Canva such as Magic Write (AI writing assistant), Magic Eraser/Replace (image editing), and Magic Design (auto-formatting).
- Purpose: Transform plain AI-generated text into beautiful, structured, and printable handouts for teaching.

### **Step-by-Step Procedure**

#### **Step 1: Open Canva Docs**

1. Go to <https://www.canva.com/docs>
2. Click “Create a new doc”

#### **Step 2: Paste AI/Notion Content**

1. Copy the lecture notes on Python Loops (generated from ChatGPT or stored in Notion).
2. Paste the text into Canva Docs.
3. Canva automatically breaks the content into blocks (headings, subheadings, bullet points).

OR

4. Type “/magic write” or click on the Magic Write icon (sparkle ).
5. Enter a prompt, for example:
6. “Generate lecture notes on Python Loops.”

### **Step 3: Format Content into Sections**

1. Highlight key sections (e.g., *Introduction, For Loop, While Loop, Control Statements*).
2. Apply Canva Docs formatting:
  - o Heading 1 → “Lecture Notes: Python Loops”
  - o Heading 2 → “For Loop”, “While Loop”, etc.
  - o Bullets/Numbered Lists for examples.

### **Step 4: Add Visuals from Canva Elements**

1. In the Canva Docs sidebar, click “+” → Elements.
2. Search for images/icons like “loop icon”, “Python logo”, “flowchart”.
3. Drag and drop visuals next to each section.
  - o Example: Use a circular arrow icon next to “For Loop”.

### **Step 5: Insert “Key Takeaway” Blocks**

1. After each section, insert a colored text block.
2. Title it “Key Takeaway”.
3. Summarize the section in 1–2 lines.
  - o Example: “*For loops are used when you know the number of repetitions.*”

### **Step 6: Add a Quiz Section**

1. At the end of the document, create a heading “Quick Quiz”.
2. Add 2 simple questions (as per syllabus requirement).

File Magic Switch Editing ⌛ 1. Introduction to Loops Try Pro for 30 days

Design Elements Brand Uploads Projects Apps

# Python Loops

## Introduction to Loops

- In programming, **loops** are used to execute a block of code repeatedly.
- Instead of writing the same code multiple times, loops allow automation of repetitive tasks.
- Python provides **two main types of loops**:
  - for loop**
  - while loop**

### The for Loop

• Used when you know **how many times** you want to run a block of code.

Design Elements Brand Uploads Projects Apps

Search icon Magnifier Circle arrow >

# Python Loops

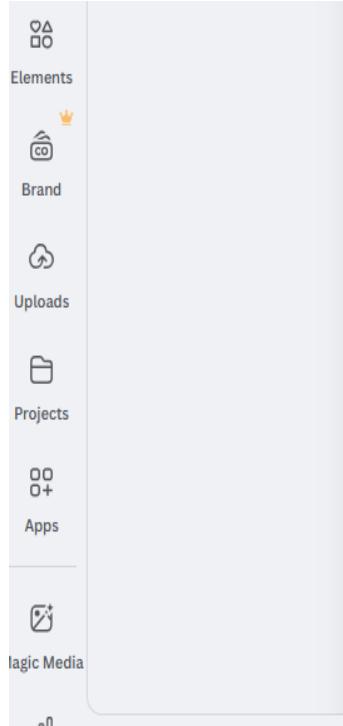
## Introduction to Loops

- In programming, **loops** are used to execute a block of code repeatedly.
- Instead of writing the same code multiple times, loops allow automation of repetitive tasks.
- Python provides **two main types of loops**:
  - for loop**
  - while loop**



### The for Loop

- Used when you know **how many times** you want to run a block of code.
- It iterates over a **sequence** (list, tuple, string, range, etc.).



### Key Takeaway

Use **for loop** when you know the number of repetitions.

Use **while loop** when repetitions depend on a condition.

## Quick Quiz

### ✓ Example Quiz:

- Q1: Which loop should you use when you know the number of iterations in advance?
  - a) while loop
  - b) for loop
  - c) nested loop
  - d) Infinite loop

*(Correct Answer: b)*
- Q2: What does the break statement do in a loop?
  - a) Skips current iteration
  - b) Stops the loop completely
  - c) Does nothing
  - d) Restarts the loop

A  
G

## Expected Output

- A visually rich handout with:
  - Clear sections for each loop concept.
  - Relevant Python-related images/icons.
  - “Key Takeaway” summary after each section.
  - A short 2-question quiz at the end.

## **PROGRAM 5**

Demonstrate the use of Magic Suite-Magic Eraser/Replace, Magic transform, etc.

Example:

- a. Demonstrate the Magic Write feature. Say, Right-click on a paragraph, then choose actions like: “Rewrite this”, “Make it more concise”, “Fix grammar”, “Expand this with an example”, “Custom prompt” (e.g., “Explain this in simple language”)
- b. Demonstrate the Magic Eraser / Replace feature which is Primarily used in images. Say, Erase unwanted objects (e.g., a watermark or irrelevant icon), Replace an item in an image (e.g., change a laptop to a chalkboard)
- c. Demonstrate the Magic Transform feature which can be used to instantly convert the above created document into multiple formats.

### **Objective:**

To use Canva’s Magic Suite tools (Magic Write, Magic Eraser/Replace, Magic Transform) to enhance text and images, and to convert documents into multiple formats.

### **Tools Required:**

- Canva account → <https://www.canva.com>
- Canva Docs / Canva Design editor

### **Theory :**

- Magic Write → AI-powered text editor that rewrites, expands, or simplifies text.
- Magic Eraser/Replace → Used in images to remove or replace unwanted objects.
- Magic Transform → Instantly converts a document into another format (e.g., slide deck, blog post, social media graphic).

### **Step-by-Step Procedure**

#### **(a) Magic Write**

*Used for rewriting or improving text in Canva Docs.*

1. Open Canva Docs with your content (e.g., Python Loops notes).
2. Select a paragraph of text.
3. Right-click → Choose Magic Write.

4. Options appear, such as:
  - “Rewrite this”
  - “Make it more concise”
  - “Fix grammar”
  - “Expand this with an example”
5. Canva rewrites the text instantly.
  - Example: A long explanation of for loops can be shortened into 3 simple bullet points.

### **(b) Magic Eraser / Replace**

*Used in images for cleaning or editing visual content.*

1. Open Canva Design Editor.
2. Insert or upload an image (e.g., a classroom photo with a watermark).
3. Select the image → Choose Edit Image → Magic Eraser.
4. Brush over the unwanted part (e.g., watermark, icon, object). Canva removes it automatically.
5. For replacing:
  - Select the object → Use Magic Replace.
  - Example: Replace a laptop in an image with a chalkboard.
6. The image updates instantly.

### **(c) Magic Transform**

*Used to instantly repurpose your content into different formats.*

1. Open the Python Loops lesson in Canva Docs.
2. Click on the Magic Transform button (wand icon).
3. Choose a format to convert into:
  - Presentation (slides)
  - Social Media Post
  - Blog Article
  - Infographic
4. Canva auto-generates the new format.
  - Example: The lecture notes can become a PowerPoint-style presentation with titles, visuals, and bullet points.

The screenshot shows a digital workspace interface with a left sidebar and a main content area. The sidebar includes sections for Design, Elements, Brand, Uploads, Projects, Apps, and Magic Media. The main content area has a toolbar at the top with Magic Write, font sizes H1, H2, and Canva Sans, and various styling icons. A title 'Python Loops' is displayed, followed by a section titled 'Introduction to Loops' with the following bullet points:

- In programming, **loops** are used to execute a block of code repeatedly.
- Instead of writing the same code multiple times, loops allow automation of repetitive tasks.
- Python provides **two main types of loops**:
  1. **for loop**
  2. **while loop**.

Below this, a section titled 'For Loop' contains the following bullet points:

- A **for loop** is used to iterate over a sequence (such as a list, tuple, dictionary, set, or string).
- The basic syntax involves specifying the iterable and a variable to store each element in the sequence as it loops through.
- Example:

```
fruits = ["apple", "banana", "cherry"]
for fruit in fruits:
    print(fruit)
```

At the bottom of the content area, there are buttons for Notes, Outline, and Timer, along with a zoom slider set to 100%.

## Expected Output

- Magic Write → Concise, grammatically correct, or expanded text.
- Magic Eraser/Replace → Cleaned or updated images without unwanted elements.
- Magic Transform → Instant new version of the same content in another format.

## **PROGRAM 6**

Demonstrate the use of Gamma.app-AI-Powered presentation builder. Show the following Customizations for the document created in above examples.

Feature	Example
Slide Title/Text	Edit headings or simplify slide copy
Image Replacement	Use AI to regenerate more suitable visuals
Content Rewrite	Prompt: "Make this slide simpler for high school students"
Layout Editing	Rearrange card structure or duplicate/delete cards

### **Objective:**

To demonstrate the use of Gamma.app, an AI-powered tool that automatically generates and customizes presentations from raw text or documents.

### **Tools Required:**

- **Gamma.app account → <https://gamma.app>**

### **Theory :**

- Gamma.app transforms text or documents into presentations, slide decks, or interactive cards.
- AI can auto-format slides, replace images, rewrite content, and edit layouts.
- This saves time compared to manual slide-making in PowerPoint.

### **Step-by-Step Procedure**

#### **Step 1: Import Content**

1. Log in to Gamma.app.
2. Click “New Document” → “Start from text”.
3. Paste your content (e.g., Python Loops lecture notes).
4. Gamma automatically generates a slide deck with titles, subpoints, and visuals.

#### **Step 2: Slide Title/Text Editing**

- Select any slide title or text.
- Choose Edit or AI Rewrite.

- Example: Change  
“Introduction to For Loops” → “Understanding Python For Loops”.
- Or use AI to simplify:  
*Prompt: “Rewrite this slide for beginners in high school.”*

### **Step 3: Image Replacement**

- Select the image on a slide.
- Click Replace Image → AI Suggestions.
- Example: Replace a generic “loop symbol” with a Python logo + flow diagram.
- Gamma suggests AI-generated or stock visuals.

### **Step 4: Content Rewrite**

- Highlight a block of text.
- Use AI prompt:  
“*Make this simpler for high school students*” or  
“*Expand with an example of brushing teeth as a daily loop.*”
- Gamma instantly rewrites content to match the audience.

### **Step 5: Layout Editing**

- Click Layout Options to:
  - Rearrange the card structure.
  - Split text into multiple slides.
  - Duplicate or delete cards.
- Example: Break a long “While Loop” explanation into two separate slides:
  - Syntax and Flow
  - Example Code + Output

### **Step 6: Final Presentation Export**

1. Review the final presentation.
2. Share via link (Gamma provides interactive cards online).
3. Or export as PowerPoint/PDF for offline use.

M Mamatha S.K's Worksp... FREE

Jump to Ctrl+K

Gammas Shared with you Sites AI Images

Folders +

Organize your gammas by topic and share them with your team Create or join a folder

Templates Themes

Upcoming Gammas

+ Create new AI + New gamma Import

All Recently viewed Created by you Favorites

Let's Learn About Python Loops! 🤖🌟

Tips and tricks ⚡

Gamma Tips & Tricks

G Let's Learn About Python Loops! 🤖🌟

Theme Share Agent Present

+ New

1 Let's Learn About Python Loops! 🤖🌟

2 Why Loops Are Super (Repetitive)

3 Cool Computer Tricks Doing Things Again and Again

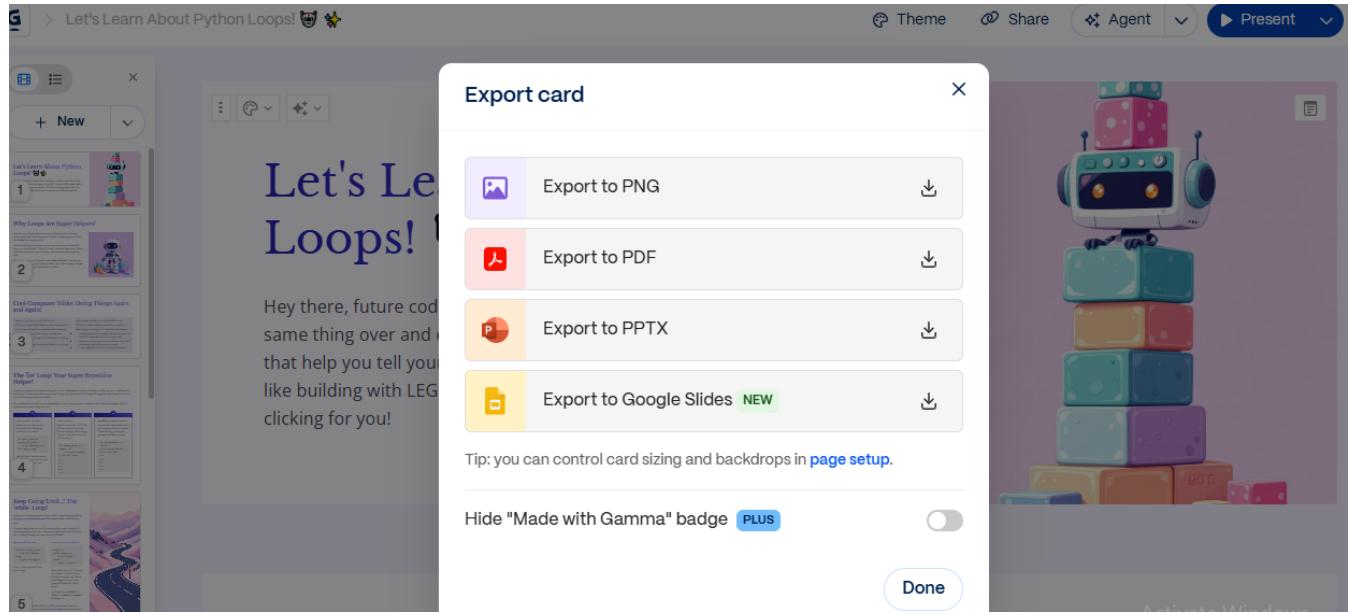
4 The For Loop Your Super Repetitive Project

5 Keep Going Until... The While Loop!

# Let's Learn About Python Loops! 🤖🌟

Hey there, future code stars! Ever wanted to make a computer do the same thing over and over again super fast? Loops are like magic spells that help you tell your computer, "Do this cool thing many times!" It's like building with LEGOs, but your computer does all the repetitive clicking for you!





## Expected Output

A customized presentation deck with:

- Edited slide titles and simplified text.
- AI-generated/replaced visuals.
- Rewritten content for different audiences.

## **PROGRAM 7**

Generate Questions from Content (CTRL Method). CTRL is a powerful method for precision prompting.

Example: Python Conditional Statements

- Prompt Example 1: Create 3 Multiple Choice Questions (MCQs) on Conditional Statements in Python for college students who are beginners. Keep the tone formal and straightforward.
- Prompt Example 2: Generate 2 Match-the-columns questions on Python Conditional Statements. Keep the questions beginner-friendly and formal.
- Demo Examples:
  - Using PDF as Content Source: ✓ I've uploaded a PDF on "Introduction to Sociology" (provide link). Generate 5 MCQs for undergraduate students. Maintain academic tone, moderate complexity.
  - Using Web Link: ✓ Use the content from the following web link (provide actual URL here) and create 3 MCQs on Photosynthesis suitable for high-school biology students.

### **Objective :**

To generate academic questions (MCQs, match-the-columns, etc.) from given content using structured precision prompting with the CTRL Method.

### **Theory : The CTRL Method**

CTRL = Context, Task, Role, Language

- Context: What content/topic the questions should be based on.
- Task: The type of questions needed (MCQs, true/false, short answer, etc.).
- Role: Who the AI is addressing (audience level – school students, undergraduates, researchers).
- Language: Style/tone (formal, simple, exam-focused).

By combining these 4 elements, prompts become precise, unambiguous, and tailored.

### **Example Prompts and Outputs**

Prompt Example 1: MCQs

Prompt:

*Context:* Python Conditional Statements

*Task:* Generate 3 Multiple Choice Questions

*Role:* For college students who are beginners

*Language:* Formal, straightforward

AI Output (Sample):

Q1. Which of the following is the correct syntax of an if statement in Python?

- a) if condition:
- b) if (condition) then
- c) if condition then
- d) condition if:

(Answer: a)

Q2. Which keyword is used in Python to check multiple conditions?

- a) else
- b) elif
- c) if-else
- d) switch

(Answer: b)

### Prompt Example 2: Match-the-Columns

Prompt:

*Context:* Python Conditional Statements

*Task:* Generate 2 Match-the-Columns questions

*Role:* Beginner-level college students

*Language:* Formal and simple

AI Output (Sample):

Q1. Match the keywords with their description:

Column A (Keyword)	Column B (Meaning)
if	Executes when condition is true
else	Executes when condition is false
elif	Checks another condition if the previous one fails

Q2. Match the example with the type of statement:

Column A (Example)	Column B (Statement Type)
if x > 10:	If statement
elif x == 5:	Else-if statement
else:	Default block

### Expected Output

- Set of 3 MCQs and 2 Match-the-columns questions generated from Python Conditional Statements.
- Questions suitable for beginners with a formal academic tone.

## **PROGRAM 8**

### **Demonstrate the Parsons Method for Interactive Problem Statements.**

Parson's Method enhances problem-solving skills by giving students code fragments or sentences they must put in the correct logical order, proven to improve conceptual understanding.

Live Demonstration Prompt:

Generate a Parson's Problem using Python conditional statements for beginner-level students. Provide shuffled code blocks for a simple "if-else" structure.

### **Objective**

To demonstrate how the Parsons Method can be used to help learners understand problem-solving and code structure by rearranging shuffled code blocks to form a correct solution.

### **Theory - Parsons Method**

What Is the Parsons Problem Method?

- The Parsons Method presents learners with a scrambled version of the correct solution.
- The learner's task is to arrange code blocks (or steps) in the correct logical order.
- It focuses on logic and sequence understanding, rather than syntax typing.

💡 Purpose: Encourage active learning and reduce cognitive load — learners focus on *what happens and when* rather than *how to type it*.

### **Structure of a Parsons Problem**

Each Parsons problem includes:

Component	Description
Problem Statement	Describes the task or algorithm to perform
Code Fragments	The lines of code in random order
Expected Output (Optional)	Helps verify correctness
Hint / Difficulty Level	Can guide learners on logic or structure

## Example Prompts and Outputs

### Prompt 1

“Generate a Parsons Problem for a Python program that checks if a number is prime.”

### Output

#### Problem Statement

Write a Python program to check if a given number is a prime number.

A **prime number** is a number greater than 1 that has no divisors other than 1 and itself.

#### Scrambled Code Blocks

Below are the lines of code in random order.

 Rearrange them to form the correct program.

```
flag = 0
num = int(input("Enter a number: "))
if num > 1:
    for i in range(2, num):
        if num % i == 0:
            flag = 1
            break
    if flag == 0:
        print("Prime")
    else:
        print("Not Prime")
else:
    print("Not Prime")
```

## Output

### Parsons Problem: Prime Number Checker

Rearrange the following lines of code into the correct order and indentation to form a working Python program that checks if a number is prime.

python

 Copy code

```
for i in range(2, num):
    if num % i == 0:
        flag = 1
        break
if num > 1:
    num = int(input("Enter a number: "))
    if flag == 0:
        print("Prime")
    else:
        print("Not Prime")
else:
    print("Not Prime")
flag = 0
```

### Correct Solution: Prime Number Checker

python

 Copy code

```
flag = 0
num = int(input("Enter a number: "))
if num > 1:
    for i in range(2, num):
        if num % i == 0:
            flag = 1
            break
    if flag == 0:
        print("Prime")
    else:
        print("Not Prime")
else:
    print("Not Prime")
```

## **PROGRAM 9**

### **Demonstrate the usage of AI Tools for Creating and Delivering Tests.**

Tools available are: Quizizz AI, Mentimeter, Formative, Google Forms + AI (Form Presenter)

Demonstrate a Use case of AI Tools for Creating and Delivering Tests.

Once questions are created (Q7), automate their conversion into online tests for ease of deployment and analysis. Use Quizizz AI for Automated MCQs, grading and analytics.

### **Objective**

To demonstrate how AI tools can assist educators in:

- Automatically generating test questions (MCQs, short answers, etc.)
- Deploying them online quickly
- Enabling auto-grading, analytics, and feedback.

### **Tool 1: Quizizz AI**

#### **Step 1: Access Quizizz AI**

- Go to <https://quizizz.com>
- Login → Choose **Create** → **Quiz** → **Use Quizizz AI**

#### **Step 2: Generate Questions Automatically**

- Enter your prompt, e.g.:

“Generate 10 multiple-choice questions on Python Loops for undergraduate students.”

- **Quizizz AI** generates:
  - Questions
  - 4 options each
  - Correct answers
  - Difficulty tags (easy/medium/hard)

#### **Step 3: Review and Edit**

- You can edit wording, difficulty, or mark multiple correct answers.
- Add explanation notes for each question (AI can auto-suggest these).

#### **Step 4: Deliver the Test**

You have 3 delivery modes:

<b>Mode</b>	<b>Purpose</b>	<b>Example</b>
-------------	----------------	----------------

Mode	Purpose	Example
<b>Live Quiz</b>	Synchronous (classroom test)	FDP activity
<b>Homework</b>	Asynchronous (individual attempt)	Weekly assignment
<b>Assessment</b>	Formal test with analytics	Unit Test or Internal Exam

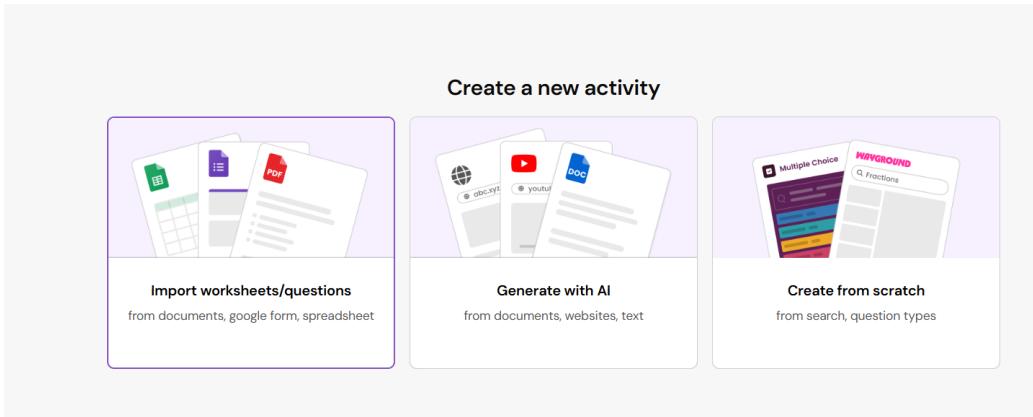
## Step 5: AI-Based Analytics

Once students attempt:

- Quizizz automatically generates:
  - Correctness percentage per question
  - Individual and class performance reports
  - Skill-based insights (“loop comprehension,” “syntax error understanding”)
  - Time taken per question
  - Downloadable reports (Excel/CSV)

## Output:

The screenshot shows the Quizizz Wayground platform. On the left, there's a sidebar with links for Home, My library, Sessions, Students, and VoyageMath. The main area has a pink gradient background. At the top right, there's a "Enter code" field. In the center, it says "Good morning, Ms. [teacher emoji] Let's get started." Below this are three buttons: "Create a resource" (with a pencil icon), "Search for resources" (with a magnifying glass icon), and "Upload & enhance your content" (with an upload icon). A search bar with the placeholder "Search for any topic" and a magnifying glass icon is below these buttons. At the bottom of the main area, there are dropdown menus for "Subject" and "Grade 6". The page also features sections for "Topics" (with a "See all" link) and "Fine Arts" (listing "Topic 1 Music Theory", "Topic 2 Music Performance and Instruments", "Topic 3 Music History and Genres", and a "See all" link). Another section shows "Health and" (listing "Topic 1 Health and Wellness" and "Topic 2 Nutrition"). A question mark icon is in the bottom right corner.



**Start from**

- Import worksheets
- Generate with AI**
- Create from scratch

Document    Text / Prompt Website    YouTube

Enter quiz topic or paste content to generate using AI

AI limit 0/10 per month ⓘ

Generate 10 multiple-choice questions on Python Loops for undergraduate students."

Preferences    Output language: English ▾

Number of questions: Automatic, 10, 15, 20, 30

Subject and Grade: Science, University

Continue

Powered by WAYGROUND AI

Mastering Python Loops

Settings    Preview    Publish

**WAYGROUND AI Actions**

- Add similar questions
- Add answer explanations
- Translate quiz
- More options

AI limit 1/10 per month ⓘ

---

**Bulk update questions**

- Time
- Points

---

**Import from**

- Google Forms
- Spreadsheet

**Search questions from Wayground Library**

Search questions

**10 questions (10 points)**

+ Add question

1. Multiple Choice    30 seconds    1 point

What is the output of the following code: for i in range(3): print(i)?

Answer choices:

- 2.5
- 1
- 1

0.12

2. Multiple Choice    30 seconds    1 point

Which of the following correctly defines a while loop?

Answer choices:

- A while loop runs a block of code a fixed number of times regardless of the condition.
- A while loop repeatedly executes a block of code as long as a specified condition is true.
- A while loop is used to define a function that does not require any conditions.
- A while loop executes a block of code only once if the condition is true.

The screenshot shows the Mentimeter dashboard with a presentation titled "Mastering Python Loops". The slide includes a "Student Preview" section with a dark background and a "Try it as a student" button. To the right, there is a list of 10 questions, each with a question text and a "Show answer options" toggle switch. The questions are as follows:

1. MULTIPLE CHOICE • 30 sec • 1 pt  
What is the output of the following code: for i in range(3): print(i)?
2. MULTIPLE CHOICE • 30 sec • 1 pt  
Which of the following correctly defines a while loop?
3. MULTIPLE CHOICE • 30 sec • 1 pt  
What will be the output of the following code: count = 0; while count < 5: print(count); count += 1?
4. MULTIPLE CHOICE • 30 sec • 1 pt

The dashboard also features a search bar, a "Get help" button, and a "M" icon in the top right corner. On the left side, there is a sidebar with icons for Home, My library, Sessions, Students, Upgrade, and a user profile icon.

## Tool 2: Mentimeter

### Quick step-by-step: Using Mentimeter

#### 1) Create an account

1. Go to [mentimeter.com](https://mentimeter.com) and sign up (email/Google/SSO).
2. Choose whether you'll create a presentation, quiz, or survey from the dashboard.

#### 2) Create a new presentation and add slides

1. Click + New presentation (or + New slide inside an existing presentation).
2. In *Edit view*, click + New slide (top left) and choose a slide type: Multiple choice, Word cloud, Open-ended, Scales, Ranking, Quiz, Pin on Image, Content slide, etc. Add question text, options, images, or other settings for each slide.

#### 3) Add instructional / content slides (optional)

1. To show participation instructions or explain an activity, add a Content → Instructions slide from the New slide menu — useful for showing how to join or the rules of a quiz.

#### 4) Configure slide / presentation settings

1. For quiz slides, set correct answers and scoring options.
2. For surveys, toggle *Survey mode* to let participants answer asynchronously.
3. Under presentation settings you can enable verified participants, accessibility checks, or change language.

## 5) Invite participants to join

During presentation you can have people join three ways:

- [menti.com](https://menti.com) + 6-digit code (display the code on the screen),
- QR code (participants scan),
- Direct join link (paste or embed).

Share whichever is easiest for your audience

## 6) Present and manage live responses

1. Click Present (play ▶) to show slides full-screen.
2. Responses will stream in real time; you can hide or show answers, lock a slide, or clear results between sessions based on your needs.

## 7) Export & analyze results after the session

1. Go to the Results tab in the presentation editor.
2. Click Download to export results as XLSX (spreadsheet), PDF of the full presentation, or screenshots of selected slides.

## Output:

The screenshot shows the Menti platform's user interface. On the left, there is a sidebar with navigation links: Home, My presentations, Shared with me, Workspace, Workspace presentations, Shared templates, Templates, Integrations, Menti Academy, Help, and Trash. The main area features a "Welcome!" message and a search bar at the top. Below the search bar are three buttons: "New Menti" (dark blue), "Start with AI" (light blue with a green star icon), and "Import presentation" (light blue). A "Popular features" section displays six icons with labels: Word cloud (red asterisk shape), Poll (blue bar chart), Open ended (pink speech bubble), Scales (purple downward arrow), Ranking (green square), and Pin on Image (blue location pin). At the bottom, there is a "Recently viewed" section and a small circular icon in the bottom right corner.

The screenshot shows a quiz slide titled "Which of the following best describes how a Large Language Model works?". The slide contains a QR code, three multiple-choice options, and speaker notes. The right side shows the slide editor with sections for Edit, Comments, Interactivity, Themes, and Templates.

## Tool 3: Formative

(Excellent for formative assessment and continuous evaluation)

### Step 1: Login → Create Assessment

- Go to <https://goformative.com>
- Click + New Formative

### Step 2: Use AI to Create Questions

- Type a prompt:

“Generate 5 short-answer and 3 multiple-choice questions on conditional statements in Python.”

- AI populates them instantly.

### Step 3: Deliver to Students

- Share via link or code; integrates with Google Classroom.

### Step 4: Real-time Monitoring

- Teachers see students' answers *live* as they type.
- You can intervene or give hints in real-time.

### Step 5: Analytics

- Formative shows mastery tracking by standard or outcome (CO/PO mapping).

Untitled Formative 4

Assign Present

Edit Responses Insights

Preview

### Short-Answer Questions

- What is the difference between if and elif in Python? Provide an example of each.
- Explain how logical operators (and, or, not) can be used with conditional statements in Python.
- Describe a real-world scenario where a nested conditional statement could be useful.
- What will happen if an else statement is used without an accompanying if statement?
- Identify the error in the following code snippet and explain how to fix it:

```
if x = 10:  
    print("x is 10")
```

Press Command/Ctrl + Enter to leave block

### Multiple-Choice Questions

- Which of the following correctly demonstrates the use of an if statement in Python?
  - A) if x: print("True")
  - B) if x = 5: print("True")
  - C) if (x == 5): print("True")

Type something to Luna  

formative by newsela

Home Activities Practice sets Classes Reports Library Notifications Support Resources My account Trial - Paid Teacher Upgrade now!

Back

## Undergrad

Ms. Chaitra S AIML 0 students 0 co-teachers Higher Ed, Other Computer Science

Students Groups Activities

Add students More options

No students enrolled

Share the class join link and student join code with students and ask them to join.

Class join link <https://frm.tv/join/EF3WNC>  Student join code EF3WNC 

Roster sync

## **PROGRAM 10**

### **Demonstrate the use of AI-Driven Research Ideation (ChatGPT + Search)**

Live Demonstration Example:

Example Prompt given to ChatGPT:

Suggest 3 novel research angles on the topic:

'Impact of Social Media on Mental Health' relevant to Psychology researchers.

### **Objectives**

- Use ChatGPT with web search integration to generate research ideas grounded in real literature.
- Refine broad topics into specific, researchable problem statements.
- Identify research gaps, objectives, and methodologies using AI prompts.
- Cross-check emerging trends using AI + real-time search tools.

### **Learning Outcomes**

- Students will produce 3–5 validated research topics with problem statements.
- Students will generate research objectives and conceptual framework diagrams.
- Students will demonstrate AI-assisted literature analysis and citation collection.

### **Step-by-Step Procedure**

#### **1: Brainstorm Broad Topics**

1. Open ChatGPT.
2. Prompt example:  
*"List 10 emerging research directions in Generative AI in higher education."*
3. Record AI-generated topics in your lab notebook or spreadsheet.

#### **2: Narrow Down to Specific Researchable Problems**

1. Choose one or two broad topics from the AI list.
2. Prompt example:  
"From the above topics, suggest one research problem suitable for a faculty research project with measurable outcomes."
3. AI provides a refined problem statement or focus area.

### **3: Validate Topics Using Web Search**

1. Use ChatGPT's web search plugin (or Google Scholar / IEEE Explore).
2. Prompt example:

“Find recent (2023–2025) papers on Generative AI for personalized learning in higher education.”
3. Record relevant studies, authors, and publication sources.

### **4: Identify Research Gaps**

1. Prompt ChatGPT:

“Based on these recent studies, suggest 3 research gaps that can be explored.”
2. Analyze gaps for feasibility, novelty, and alignment with your research domain.

### **5: Formulate Problem Statement & Objectives**

1. Prompt example:

“Draft a research problem statement and 3 objectives based on these gaps.”
2. AI produces a draft suitable for inclusion in proposals or papers.

### **6: Build Conceptual Framework**

1. Prompt example:

“Create a conceptual model showing how Generative AI tools affect faculty productivity and student learning outcomes.”
2. Use Canva / PowerPoint to visualize the framework.
3. Add mediators, inputs, and outputs as suggested by AI.

### **7: Generate Literature Summary**

1. Prompt example:

“Summarize 5 recent papers from IEEE / Scopus supporting this research problem.”
2. AI provides formatted citations with short summaries.

### **8: Draft Abstract / Proposal Summary**

1. Prompt example:

“Draft a 200-word abstract for a research proposal based on this topic and framework.”
2. AI generates a polished abstract including context, gap, objectives, and expected outcomes.

# Output

ChatGPT ▾



## Research Problem Title:

"Evaluating the Effectiveness of Generative AI-Based Personalized Feedback on Student Learning and Engagement in Higher Education"

## Background / Rationale

While generative AI tools (such as ChatGPT, Copilot, or custom LLM tutors) can provide instant feedback on student work, little empirical evidence exists on whether AI-generated feedback actually improves learning outcomes, student engagement, or feedback literacy compared to traditional instructor feedback.

This project addresses that gap by systematically measuring the learning and behavioral impact of AI-generated personalized feedback.

## Research Objectives

1. To design and integrate a GenAI feedback system into selected undergraduate courses.
2. To compare learning performance between students receiving AI-generated feedback and those receiving instructor or peer feedback.
3. To measure changes in student engagement, motivation, and satisfaction.

≡ Google Scholar Find recent (2023–2025) papers on Generative AI for personalized learning My profile My library

Articles About 35,900 results (0.50 sec)

Any time [Generative AI in Higher Education: A Leap Beyond Chatbots Toward Personalized Learning](#)  
Since 2025 [A Abbi, M Skouri, M Raoufi - ... Connected Objects and Artificial Intelligence, 2025 - Springer](#)  
Since 2024 [... This paper systematically reviews the applications of GenAI, ... \(chatbots\), personalized learning, and gamification integration... current literature on the application of generative AI in higher ...](#)  
Since 2021 [☆ Save ☆ Cite Related articles All 2 versions](#)

Sort by relevance [Transforming higher education through generative AI: Opportunity and challenges](#)  
Sort by date [A Batista - Paradigm, 2024 - journals.sagepub.com](#)  
Any type [... of education are being challenged by new methods of learning that ... Generative AI can enhance personalized learning by adapting content to fit individual student needs, learning styles, ...](#)  
Review articles [☆ Save ☆ Cite Cited by 9 Related articles All 3 versions](#)

include patents [\[HTML\] Generative AI and higher education: Trends, challenges, and future directions from a systematic literature review](#) [HTML] mdpi.com  
 include citations [J Batista, A Mesquita, G Camara - Information, 2024 - mdpi.com](#)  
 Create alert [... being integrated into personalized learning experiences, ... studies for synthesis—we opted to include only articles that ... period from 2023 to January 2024, an additional search of ...](#)  
☆ Save ☆ Cite Cited by 108 Related articles All 6 versions

[\[PDF\] Exploring Current Practices and Challenges of Using Generative AI-ChatGPT-for Personalized Learning: A Case Study for High School Science Education](#) [PDF] orvium.io  
NS Diab, A Almekhlafi - 2025 - dapp.orvium.io  
... intends to find out ways educators now use generative AI in ... of its use in personalized learning settings. The present ... This field was studied less compared to higher education in ...  
☆ Save ☆ Cite Related articles All 2 versions

### Summary Table

Gap	Focus Area	Example Measure	Potential Contribution
1. Longitudinal impact	Student learning trajectory	Multi-semester grade & engagement analytics	Evidence of durable learning gains
2. Pedagogical alignment	Cognitive depth, Bloom levels	Rubric analysis of AI vs human feedback	Framework for "pedagogically aligned AI feedback"
3. Instructor-AI collaboration	Faculty trust & workload	Survey + time-on-task metrics	Guidelines for effective human-AI co-feedback models

## **PROGRAM 11**

Deploy Elicit ([elicit.com](https://elicit.com)) for Rapid Literature Discovery.

To overcome manual search limitations, use Elicit, an AI-driven tool specialized in academic literature discovery.

### **Objective**

To learn how to use Elicit, an AI-powered academic literature discovery tool, to automate and accelerate the process of identifying, summarizing, and organizing scholarly research.

### **Theory**

Manual literature review is time-consuming and often limited by keyword-based searches. Elicit, developed by Ought, leverages Natural Language Processing (NLP) to understand research questions and retrieve semantically relevant academic papers. It summarizes findings, methods, and outcomes, helping researchers conduct systematic reviews, evidence synthesis, and meta-analyses more efficiently.

### **Procedure**

#### **1: Accessing Elicit**

1. Open a web browser and visit <https://elicit.com>.
2. Click on “Start for free” or “Log in” using your email or Google account.

#### **2: Formulating the Research Question**

1. In the main search bar, type a research question (e.g., “*How does AI improve medical diagnosis accuracy?*”).
2. Press **Enter**.
3. Elicit automatically begins retrieving relevant academic papers.

#### **3: Reviewing Search Results**

1. Observe the generated table of studies with columns such as **Title, Authors, Year, Abstract Summary, and Sample Size**.
2. Customize columns to include **Intervention, Outcome, or Methodology**.
3. Hover over titles to read detailed abstracts.

## 4: Filtering and Organizing Results

1. Use **filters** to narrow results by year, sample type, or publication venue.
2. Select relevant studies and **add them to your workspace**.
3. Export the table to **CSV** or **Excel** for citation management or analysis.

## 5: Summarizing and Synthesizing Findings

1. Click on “**Summarize papers**” to let Elicit generate key takeaways.
2. Review and edit AI summaries for clarity.
3. Copy summaries into your literature review section.

## 6: Citing Sources

1. Click on each study’s title to view its full paper (via external link).
2. Use reference managers (e.g., **Zotero**, **Mendeley**) for citation formatting.

# Output

The screenshot shows the Elicit platform interface. At the top, there's a navigation bar with 'Elicit', 'Recent', 'Library', 'Alerts', 'Upgrade' (button), 'Help', and 'Chaitra S'. Below the navigation is a search bar with the query 'How does AI improve medical diagnosis accuracy?'. To the right of the search bar are 'Send feedback' and 'Copy' buttons.

Below the search bar is a toolbar with buttons for 'Sort: Most relevant', 'Search', 'Filters', 'Column', 'Export', 'UPGRADE' (button), and 'Save to library'. There's also a 'Get full-texts' button with a 'X' icon.

The main area displays a table of search results:

Paper	Summary
<a href="#">Exploring Artificial Intelligence Techniques for Enhanced Accuracy in Medical Imaging and Early Disease Diagnosis</a> Sandeep Kumar, Pratik Agrawal, Nitin Rakesh, Monali Gulhane, Saurabh Bhattacharya International Computer Science Conference, 2025, 0 citations Abstract only	AI improves medical diagnosis accuracy by using deep learning algorithms and machine learning models to automatically detect small trends in medical images *, performing on par with or better than expert doctors *, and potentially reducing errors and improving personalized treatment plans *.
<a href="#">Utilization Of Artificial Intelligence In Image-Based Medical Diagnosis</a> Rizki Annisa Febriani Jurnal Komputer Indonesia, 2023, 0 citations Full text	AI improves medical diagnosis accuracy by using deep learning and CNN to detect complex patterns in medical images, * achieving over 90% accuracy in detecting certain diseases and reducing human errors. *
<a href="#">Harnessing AI Algorithms for Accurate Medical Diagnosis from Electronic Health Record</a> Jyoti, Nishant, Tanisha Aggarwal, Sumit 2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI), 2025, 1 citation Abstract only	AI algorithms improve medical diagnosis accuracy by analyzing EHR data to identify patterns and correlations, * reducing misdiagnosis rates and enhancing clinicians' decision-making abilities. *

To the right of the table, there's a summary panel with the heading 'Summarize these papers' and a 'Copy' button. It contains the following text:

**Artificial Intelligence significantly improves medical diagnosis accuracy by leveraging advanced machine learning techniques that can detect subtle patterns in medical data with remarkable precision.**

The evidence is robust: [Omar Sabri et al., 2025](#) analyzed 138 studies and found AI algorithms frequently achieve diagnostic performance equal to or surpassing human experts, particularly in complex pattern recognition. Specifically, AI demonstrates exceptional capabilities in early disease detection, including skin cancer and diabetic retinopathy, and radiologist-level performance in pneumonia detection [Omar Sabri et al., 2025](#).

Key techniques like Convolutional Neural Networks enable AI to process medical images with unprecedented accuracy, reducing diagnostic errors and standardizing interpretations [Sandeep Kumar et al., 2025 & 1 others](#). By analyzing vast datasets, AI can identify nuanced medical indicators that human practitioners might miss, ultimately improving patient outcomes and treatment planning.

At the bottom right, there's a text input field with the placeholder 'Ask anything about the results' and an upward arrow icon.

How does AI improve medical diagnosis accuracy? Open ▼Send feedback X

<span style="font-size: 0.8em;">Sort: Most relevant</span>		<span style="font-size: 0.8em;">Search</span>	<span style="font-size: 0.8em;">Filters</span>	<span style="font-size: 0.8em;">+ Column</span>	<span style="font-size: 0.8em;">Export</span> <span style="color: #808080;">▼</span>	<span style="font-size: 0.8em;">UPGRADE</span>	<span style="font-size: 0.8em;">Save to library</span>	<span style="font-size: 0.8em;">Get full-texts?</span>	<span style="font-size: 0.8em;">X</span>
<span style="font-size: 0.8em;">Paper</span>		<span style="font-size: 0.8em;">Summary</span>		<span style="font-size: 0.8em;">Intervention</span>		<span style="font-size: 0.8em;">Outcome</span>		<span style="font-size: 0.8em;">Methodology</span>	
<input type="checkbox"/> <a href="#">Exploring Artificial Intelligence Techniques for Enhanced Accuracy in Medical Imaging and Early Disease Diagnosis</a>		AI improves medical diagnosis accuracy by using deep learning algorithms and machine learning models to automatically detect small trends in medical images *, performing on par with or better than expert doctors *, and potentially reducing errors and improving personalized treatment plans *.		The intervention is the use of Artificial Intelligence (AI) methods in medical imaging, specifically focusing on deep learning algorithms, computer vision, machine learning models, convolutional neural networks (CNNs), and techniques like reinforcement learning and generative adversarial networks (GANs) to improve accuracy and predict diseases. *		<ul style="list-style-type: none"><li>- Improved accuracy in medical imaging and early disease diagnosis</li><li>- Enhanced speed and patient results *</li><li>- More accurate diagnoses, especially in cancer, heart, and neurology *</li><li>- AI performance comparable to or better than expert doctors *</li><li>- Prediction of diseases using historical image data and clinical factors *</li><li>- Addressing issues like inconsistent data and incorrect interpretations *</li><li>- Personalized treatment plans</li><li>- Reduced diagnostic errors</li><li>- Faster work processes *</li></ul>		<ul style="list-style-type: none"><li>- Deep learning algorithms</li><li>- Computer vision</li><li>- Machine learning models *</li><li>- Convolutional neural networks (CNNs) *</li><li>- Reinforcement learning</li><li>- Generative adversarial networks (GANs) *</li><li>- Analysis of historical image data and clinical factors *</li></ul>	
<input type="checkbox"/> <a href="#">Utilization Of Artificial Intelligence In Image-Based Medical Diagnosis</a>		AI improves medical diagnosis accuracy by using deep learning and CNN to detect complex patterns in medical images, * achieving over 90% accuracy in detecting certain diseases and reducing human errors. *		The intervention is the use of Artificial Intelligence (AI), specifically deep learning and Convolutional Neural Networks (CNN), to improve the accuracy and efficiency of medical diagnosis systems by analyzing medical images. *		<ul style="list-style-type: none"><li>- Improved accuracy of diagnoses</li><li>- Reduced human errors in medical image analysis</li><li>- Increased speed of diagnostic process</li><li>- Achieved accuracy of over 90% in detecting certain diseases (lung cancer, brain tumors, pneumonia) *</li></ul>		The methodology involves a literature study approach to understand recent developments and challenges, followed by the development and testing of a prototype AI system using a dataset of medical images. The performance of the model is evaluated using metrics such as accuracy, sensitivity, and specificity. *	

## **PROGRAM 12**

### **Using Consensus for Quick Expert Insights ([consensus.app](#)).**

The Consensus AI tool summarizes academic research consensus clearly and visually.

#### **Objective**

The objective is to test or demonstrate how effectively the tool can deliver expert academic insights by automatically synthesizing and visualizing consensus from peer-reviewed research in response to specific queries.

#### **Theory**

Consensus is an AI-powered search engine that summarizes peer-reviewed academic research into clear, evidence-based insights. Unlike chatbots that generate text from the web, Consensus searches exclusive academic databases to find, synthesize, and visualize scientific consensus.

#### **Procedure**

##### **1. Sign Up and Log In**

- Navigate to [consensus.app](#) and sign up using Google or institutional credentials.
- Verify your email address to activate your account.

##### **2. Interface Overview**

Once logged in, you'll see:

- Search Bar — Type any academic question or topic.
- Filters Panel — Narrow by publication date, field of study, or study type.
- Results Dashboard — Displays AI summaries, Consensus Meter visuals, and direct citations to original papers.

##### **3: Formulate Your Research Query**

- Think of a clear, focused question, for example:
  - "Does social media use negatively impact teenagers' mental health?"
- Enter this question into the search bar on Consensus.app.

##### **4: Initiate the Search**

- Submit your query.
- Wait as Consensus searches peer-reviewed academic research exclusively.

## **5: Review Results Overview**

- Examine the Consensus Meter that visually shows the proportion of studies that agree, disagree, or are neutral regarding your question.
- Read the AI-generated summary statements presenting synthesized expert insights.

## **6: Conduct In-Depth Exploration of Summaries**

- Click on each summarized statement to:
  - View supporting papers and details.
  - Read synopses of underlying evidence.
  - Understand nuances or conflicting findings.

## **7: Apply Advanced Filters to Refine Results**

- Narrow results by:
  - Year (e.g., last 5 years for recent evidence).
  - Relevance to your research focus.
  - Study type such as randomized controlled trials, meta-analyses, observational studies.
  - Agreement level to focus on highly consensual findings or explore dissent.

## **8: Analyze Filtered Results**

- Observe how the Consensus Meter and summary insights change with filtering.
- Identify the strongest evidence or gaps in current research.

## **9: Access and Review Original Sources**

- For key points, examine linked academic papers directly for deeper study or citation.

## **10: Document Findings**

- Take notes on consensus levels, key outcomes, and study types.
- Use summaries and citations to support your research, report, or presentation.

## Output:

The screenshot shows a digital research interface. On the left, a sidebar includes options like 'New Thread', 'Home', 'History', 'Research Hub', and 'My favorites'. The main area displays a query titled 'Does social media use negatively impact teenagers' mental health'. It shows a 'Pro' analysis with 2 steps and 20 sources. A summary states: 'While problematic or excessive social media use is linked to negative mental health outcomes in teenagers, the overall relationship is complex, with both risks and potential benefits depending on usage patterns and individual factors.' Below this is a consensus meter with a green bar at 50% and an orange bar at 42%, with a red bar at 8%. The categories are 'Yes 50%', 'Possibly 0%', 'Mixed 42%', and 'No 8%'. A 'All details' button is visible. At the bottom, there's a 'Follow up...' section with filters for 'All' and 'Pro'.

FIGURE 1 Consensus meter shows moderate agreement on negative impacts, with nuance.

### Evidence of Negative Impacts

- Multiple systematic reviews and meta-analyses consistently find that problematic or excessive social media use is

### Summary Table: Social Media Use and Teen Mental Health

Type of Use	Mental Health Impact	Notes/Mechanisms	Citations
Problematic/Heavy	Moderate negative	Depression, anxiety, stress, distress	<span>1</span> <span>10</span> <span>14</span> <span>16</span> <span>20</span>
General/Moderate	Small/weak/inconsistent	Varies by individual/context	<span>2</span> <span>3</span> <span>4</span> <span>8</span> <span>13</span> <span>16</span>
Positive/Supportive	Sometimes positive	Social support, reduced isolation	<span>5</span> <span>6</span> <span>7</span> <span>8</span> <span>16</span>

FIGURE 2 Table summarizes impact by type of social media use.

## **PROGRAM 13**

### **Visualizing Research Connections with Litmaps ([app.litmaps.com](http://app.litmaps.com))**

Litmaps, a visualization tool that simplifies understanding complex academic citation networks visually

#### **Objectives:**

The objective is to Visually map citation relationships among academic papers, Identify key papers, authors, and research trends, Efficiently explore and expand literature networks for reviews or planning and Discover research gaps and emerging areas by visualizing connections over time.

#### **Theory**

Litmaps is built on the concept of citation networks—graphs where each node represents a research paper and each edge (arrow) represents a citation from one paper to another. By visualizing these networks, researchers can:

- See how knowledge builds over time (who cites whom).
- Identify clusters of related research and influential works.
- Spot gaps, trends, and the evolution of ideas in a field.
- Use interactivity to explore abstracts, authors, and further connections, making literature reviews more intuitive and less overwhelming.

#### **Step-by-Step Procedure**

##### **1. Access Litmaps**

- Go to [app.litmaps.com](http://app.litmaps.com) and log in or create a free account.

##### **2. Enter Your Core Paper or Topic**

- Input a core research paper (by title or DOI) or a topic keyword into the search bar.
- Example: Enter the DOI of a foundational paper in your field.

##### **3. Generate and Explore the Visual Citation Map**

- Litmaps will create a visual map where each node is a paper and arrows show citation relationships.
- The map displays:
  - Highly cited papers (often at the top)
  - Recent publications (often to the right)
  - Direct and indirect citation links

## 4. Interact with the Map

- Click on any paper node to view its abstract, authors, and citation details.
- Expand connections by exploring related or citing/cited papers.
- Use the “More like this” or “Refresh” options to discover additional relevant literature.

## 5. Refine and Filter the Visualization

- Use built-in filters to narrow the map by:
  - Year (e.g., focus on recent research)
  - Citation count (e.g., highlight influential papers)
  - Keywords (e.g., focus on specific subtopics)
  - Publication type (e.g., reviews, conference papers)
- Tag or color-code articles for organization and thematic grouping.

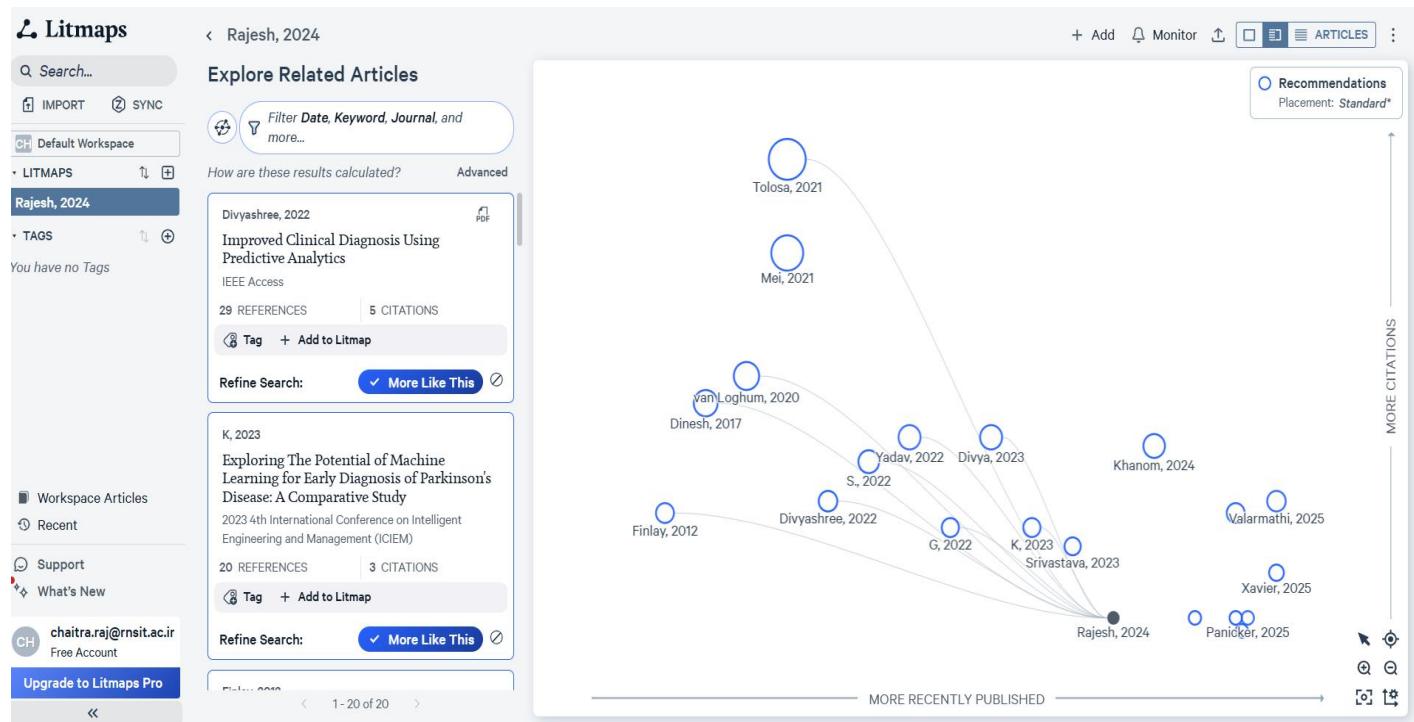
## 6. Analyze and Annotate

- Rearrange nodes, add labels, or color-code to highlight themes or timelines.
- Identify clusters, research gaps, or influential authors.

## 7. Monitor and Share

- Enable automatic monitoring to receive updates when new relevant papers are published.
- Share your Litmap with collaborators or include it in presentations and reports.

## Output:



## **PROGRAM 14**

Explore how Generative AI can be applied in education to enable personalised learning experiences and support learners across various tasks. Use AI Tools such as Khanmigo, QuestionWell (For generating questions aligned to standards) or Diffit (For creating differentiated instructional materials).

### **Objectives**

- Enable personalized learning by tailoring educational content and feedback to each student's needs and abilities.
- Support learners with adaptive materials, instant feedback, and differentiated instruction across various subjects and tasks.
- Enhance engagement, mastery, and inclusivity by providing customized learning paths and resources.

### **Step-by-Step Procedure: Using Khanmigo (AI Tutoring Tool)**

#### **1. Access the Tool**

- Go to Khan Academy and log in to your account.

#### **2. Enable Khanmigo**

- If you're a teacher, enable Khanmigo from your account settings or dashboard.

#### **3. Select Your Activity**

- Choose from options like "Tutor Me: Math and Science," "Lesson Plan Generator," or "Question Generator" based on your needs.

#### **4. Input Your Topic or Question**

- Enter a homework question, lesson topic, or prompt (e.g., "Explain photosynthesis" or "Create a quiz on fractions").

#### **5. Interact with Khanmigo**

- For tutoring, Khanmigo will guide you with hints, follow-up questions, and step-by-step explanations.
- For teachers, Khanmigo generates lesson plans, questions, or feedback instantly.

#### **6. Review and Customize Output**

- Edit or refine the generated content as needed.
- Ask Khanmigo to adjust difficulty, format, or focus for your students.

#### **7. Assign or Use Materials**

- Share lesson plans, quizzes, or feedback with students.

- Track student progress and adjust instruction using Khanmigo's analytics and suggestions.

## 8. Iterate and Improve

- Use Khanmigo's feedback and data to continually refine your teaching or learning approach.

This procedure can be adapted for other generative AI tools in education by following similar steps: access, input, interact, review, assign, and iterate.

### Output:

The screenshot shows the Khan Academy Khanmigo Tools page. At the top, there's a navigation bar with 'Explore', 'Search', 'Khan Academy' logo, 'Khanmigo', 'Donate', and 'Chaitra S'. Below the navigation is a dark header bar with 'Welcome, Chaitra S' and 'Add your school'. The main content area is titled 'Khanmigo Tools' and features a sub-header 'Free AI powered tools designed to save you time and improve instruction!'. It includes a 'Tools' button and a 'My Documents' button. Below this, there are six tool cards: 'Blooket Generator' (Create Blooket questions on a variety of topics), 'Chunk Text' (Break complex texts into manageable sections for easier student comprehension), 'Class Newsletter' (Produce engaging newsletters to keep parents informed about class activities), 'Class Snapshot' (Review your students' performance and trends), 'Clear Directions' (Generate concise, easy-to-follow instructions for assignments and activities), and 'Discussion Prompts' (Craft engaging prompts to stimulate meaningful classroom discussions). Each card has a star icon for favoriting.

The screenshot shows a quiz editor interface on the Khan Academy Khanmigo platform. At the top, there's a navigation bar with 'Explore', 'Search', 'Khan Academy' logo, 'Khanmigo', 'Donate', and 'Chaitra S'. Below the navigation is a header bar with a checked checkbox icon, the title 'How chatbots and large language models work - Multiple choice quiz', a 'Saved to My Documents' button, and 'Share', 'Print', 'Export' buttons. A note at the top says 'Double check for accuracy and avoid sharing personal info with Khanmigo.' Below the header is a rich text editor toolbar with various formatting options. The main content area displays a multiple-choice question:

**How chatbots and large language models work - Multiple choice quiz**

*Note: This tool needs your expertise to be excellent. Double-check Khanmigo's accuracy and ensure wording is appropriate for any sensitive topics.*

*Reference: This quiz is based on this [video](#).*

1. Which statement best describes how a large language model operates?

- A large language model is programmed with fixed rules for generating sentences.
- A large language model only recognizes images and faces.
- A large language model is trained on vast amounts of text data to predict the next word or token in a sequence.
- A large language model is designed to translate languages without any training data.

2. How do neural networks improve the prediction of the next token in a sequence compared to

## LLM on chatbot

Search student reading Actions

### Understanding Large Language Models (LLMs) in Chatbots

#### Introduction to Chatbots

A chatbot is a computer program designed to simulate conversation with human users. Chatbots can be simple, following predefined rules, or complex, using advanced technologies like Large Language Models (LLMs). LLMs are a type of artificial intelligence that can understand and generate human-like text based on the input they receive.

#### What is a Large Language Model?

A Large Language Model is a type of machine learning model that is trained on a vast amount of text data. The goal of an LLM is to learn patterns in language so that it can generate coherent and contextually relevant responses. Think of an LLM as a giant library filled with books on various topics. When you ask a question, the LLM searches through its "library" to find the best response based on what it has learned.

#### How LLMs Work

**1. Training on Data:** LLMs learn by being trained on large datasets that include books,

Comprehension Discussion Vocabulary

0 selected Actions Filters Export / Assign

Get Started

Explore the features of QuestionWell to get the most out of your experience.

Guided Walkthrough 2 / 7

- 1. What is the primary function of a Large Language Model?
  - A. To store vast amounts of user interaction
  - B. To follow predefined rules only for simple tasks
  - C. To generate coherent and contextually relevant responses
  - D. To physically interact with real-world objects
- 2. The text uses a "giant library" and a "chef" as analogies. What core function do both analogies emphasize?
  - A. To store vast amounts of user interaction
  - B. To follow predefined rules only for simple tasks
  - C. To generate coherent and contextually relevant responses
  - D. To physically interact with real-world objects

Modify with AI Edit

Large Language Models: Impact and ...

Preview Mode: [Create Free Account](#) or [Sign In](#) for full access

[Create Free Account](#)

[Sign In](#)

Reading & Summary Reading Length Modify Reading Change Activity

## Reading & Summary

### Impact of Large Language Models on Society

Large Language Models (LLMs) are changing the game in artificial intelligence, transforming how we process and generate natural language. These AI systems are trained using massive amounts of text data, enabling them to produce human-like text, translate languages, and even generate code. Think of them as super-smart parrots, able to mimic and manipulate language in impressive ways.

One of the most well-known LLMs is GPT-3, which was unveiled by OpenAI in July 2020. At the time, it was the largest language model anyone had ever seen. GPT-3 is trained to predict the next

## **Viva questions:**

### **1 Create high quality, structured course content using Generative AI tools (ChatGPT)**

1. What is the main advantage of using ChatGPT for course content creation?
  2. How can we ensure the generated content is accurate?
- 

### **2 Demonstrate the Canvas mode in ChatGPT**

1. What is Canvas mode in ChatGPT?
  2. How is Canvas useful in education?
- 

### **3 Demonstrate the usage of Notion**

1. What is Notion used for?
  2. What features make Notion powerful?
- 

### **4 Demonstrate the use of Canva Docs and Canva Magic Tools**

1. What are Canva Docs?
  2. What does the Magic Write tool do?
- 

### **5 Demonstrate the use of Magic Suite (Magic Eraser, Magic Replace, Magic Transform)**

1. What is Magic Eraser used for?
  2. What is Magic Transform in Canva?
- 

### **6 Demonstrate the use of Gamma.app (AI-powered presentation builder)**

1. What is Gamma.app used for?
  2. How is it different from PowerPoint?
- 

### **7 Generate Questions from Content (CTRL Method)**

1. What does CTRL stand for?
  2. Why is the CTRL method useful?
- 

### **8 Demonstrate the Parsons Method for Interactive Problem Statements**

1. What is the Parsons Method?
  2. How does it help learning?
- 

## **D**emonstrate AI Tools for Creating and Delivering Tests

1. Name one AI tool used for creating tests.
  2. How can AI improve test delivery?
- 

## **10** Demonstrate AI-Driven Research Ideation (ChatGPT + Search)

1. How can ChatGPT assist in research ideation?
  2. Why combine ChatGPT with Search?
- 

## **11** Deploy Elicit (elicit.com) for Rapid Literature Discovery

1. What is Elicit used for?
  2. What is one major advantage of Elicit?
- 

## **12** Using Consensus for Quick Expert Insights (consensus.app)

1. What does Consensus do?
  2. How is it helpful for students?
- 

## **13** Visualizing Research Connections with Litmaps

1. What is Litmaps used for?
  2. How does this help researchers?
- 

## **14** Generative AI in Education (Khanmigo, QuestionWell, etc.)

1. How does Generative AI support personalized learning?
2. What are Khanmigo and QuestionWell used for?