**1. Introduction to Python Programming Language:**

1. You’re organizing an event and need to capture names of attendees. Write a program that accepts names from the user until they type “done” and prints a thank you message for each unique name.
2. You're building a simple calculator for a beginner's math course. Write a program that takes two numbers and allows the user to choose between addition, subtraction, multiplication, or division.
3. Imagine you’re creating a system for an online platform. Write a program that checks if a given file path is valid or not.
4. You're a cashier and need to generate bills. Write a Python script that takes the item names and prices, calculates the total, and displays a formatted bill.

**2. Data Types & Input/Output:**

1. You’ve been hired by a company to manage their inventory. Create a program that tracks the stock levels of 5 items, allowing you to input and output the quantities dynamically.
2. You’re working as a developer at a retail company. Write a program to take a price input from the user and apply a discount of 10% if the price is above $100.
3. You are collecting data for a survey. Write a Python program that accepts multiple types of data (int, float, string) and displays the type of each input.
4. You’re a scientist collecting data from various experiments. Write a program that converts a list of experimental readings from Celsius to Fahrenheit.

**3. Operators and Expressions:**

1. Imagine you’re calculating taxes for a country. Write a Python program that calculates income tax based on three different tax brackets.
2. You’re designing a grading system for a school. Write a Python program to check whether a student has passed or failed based on input marks.
3. You're creating a BMI calculator. Write a program that asks for a user’s height and weight, calculates their BMI, and categorizes them as underweight, normal, or overweight.
4. You’re a restaurant owner and want to calculate the final bill including a service charge and tax. Write a program that asks for the base bill amount and applies a 5% service charge and 10% tax.

**4. Control Structures:**

1. You're creating a password strength checker. Write a Python program to determine if a user’s password meets requirements (length and character types).
2. You are developing a traffic control system. Write a Python program that changes the signal color based on time intervals (red, green, yellow).
3. Imagine you are developing a vending machine. Write a Python program that repeatedly accepts coins and dispenses items when the total amount matches or exceeds the item’s price.
4. You are a store manager, and you need to find out which product sold the most. Write a Python program that takes a list of sales numbers and identifies the product with the highest sales.
5. You’re working on an automated email responder. Write a Python program that processes email subjects and replies based on keywords (e.g., if the subject contains "refund", send a refund response).
6. Imagine you’re simulating a simple banking system. Write a program that asks for a withdrawal amount and checks if the user has enough balance, printing appropriate messages.
7. You're building a weather station simulation. Write a Python program that prompts for temperature readings and gives recommendations based on ranges (e.g., if below 10°C, print “Wear a jacket”).
8. You're a game developer creating a turn-based game. Write a program that simulates rolling a die and repeats the process until one player reaches a score of 100.

**5. Lists and Tuples:**

1. You are working for an airline and need to manage flight bookings. Write a Python program that takes a list of booked passengers and prints the names in alphabetical order.
2. You are building a registration system for an online course. Write a Python program that checks if a student’s name is already registered (find duplicates).
3. You're creating a simple playlist system. Write a Python program that accepts song titles from the user and removes duplicates.
4. You are working on a task tracker. Write a program that takes a list of tasks, lets the user mark tasks as complete, and then displays only the remaining tasks.
5. Imagine you're a teacher creating a grade book. Write a Python program that accepts a list of student scores and prints the class average, highest, and lowest scores.
6. You’re developing a library system. Write a Python program to keep track of borrowed books using a tuple, where each tuple holds the book name and due date.
7. You’re managing a conference. Write a Python program that takes a list of attendee names and checks if any name is repeated (find duplicates).
8. You're tasked with managing customer orders. Write a Python program to keep track of orders in a tuple and print all orders placed on a specific day.
9. You're building a meal planner. Write a Python program that stores different meal options for the week in a list and allows the user to print the meals for any specific day.
10. You're a coach organizing a sports team. Write a program that manages the team lineup in a tuple and allows you to substitute players based on their position.

**6. Strings:**

1. You’re building a search engine for book titles. Write a Python program that accepts a search term and returns the titles that contain that term.
2. You’re writing a text editor. Write a program that reads a paragraph and counts how many times each word appears.
3. You are tasked with cleaning up user data. Write a Python program that removes all special characters from a string.
4. You're working for a marketing company and need to format customer names. Write a program that takes a name as input and converts it to "Last name, First name".
5. You are developing a secure messaging app. Write a Python program that takes a message from the user and reverses each word in the sentence.
6. You're helping with SEO for a website. Write a Python program that counts how many times specific keywords appear in a webpage text.
7. You’re building a customer feedback system. Write a Python program to find the most frequently occurring word in a customer feedback string.
8. You’re creating a registration system. Write a Python program that checks if an email address contains “@” and ends with “.com”.
9. You are tasked with formatting product descriptions for a catalog. Write a Python program that capitalizes the first and last letter of each word.
10. You're working with a translation service. Write a Python program that takes a sentence and translates it into Pig Latin (move the first letter of each word to the end and add “ay”).

**7. Dictionaries:**

1. You’re developing a leaderboard for an online game. Write a Python program that keeps track of player scores in a dictionary and prints the top player.
2. You're creating a catalog for a bookstore. Write a program that stores book titles and prices in a dictionary and allows users to search for a book’s price.
3. You’re managing a social media platform. Write a Python program that tracks user comments in a dictionary and counts the number of comments per user.
4. You’re building a voting system. Write a Python program that counts votes for candidates stored in a dictionary and announces the winner.
5. You're a teacher who needs to calculate the final grade for students. Write a Python program that stores student names and their grades in a dictionary, and allows the user to calculate the class average.
6. You are responsible for managing a gym’s membership system. Write a Python program that stores member names and their expiration dates in a dictionary, and checks which memberships are expiring this month.
7. You’re creating a shopping app. Write a Python program that keeps track of product prices in a dictionary, and calculates the total cost of items purchased.
8. You're building a real estate system. Write a Python program to store house listings in a dictionary, where each key is the house ID and each value is the price. Implement a search feature.
9. You’re creating a stock market app. Write a Python program to store the prices of stocks in a dictionary and let users view stock prices.
10. You’re developing a budget tracker. Write a Python program that allows users to input expenses, stores them in a dictionary, and prints a summary of total spending by category.

**8. Functions:**

1. You’re working on a fitness app. Write a Python function that calculates the body mass index (BMI) based on height and weight and returns the category (underweight, normal, overweight).
2. You’re developing a ride-sharing app. Write a function that calculates the fare based on distance and time.
3. You’re building a tax calculator for a business. Write a function that calculates income tax based on income and tax brackets.
4. You’re developing a GPA calculator for a school. Write a function that calculates GPA based on a list of grades.
5. You're creating a temperature conversion tool. Write a Python function that converts temperatures between Celsius and Fahrenheit.
6. You are working on a currency conversion app. Write a Python function that converts an amount from one currency to another using conversion rates.
7. You're developing a financial calculator. Write a function to calculate monthly

**8. Functions (continued):**

1. You are developing a financial calculator. Write a Python function that calculates the monthly mortgage payment based on the loan amount, interest rate, and loan term.
2. You’re creating a quiz app. Write a function that takes a list of questions and their correct answers, and grades the user's responses.
3. You are working on a customer loyalty program. Write a function that calculates reward points based on a customer's total purchases.
4. You’re building an inventory system. Write a Python function that takes a product’s current stock and the number of items sold, and updates the stock.
5. You’re tasked with building a delivery app. Write a function that calculates the estimated delivery time based on the distance and traffic conditions.
6. You’re managing a hotel booking system. Write a Python function that calculates the total cost of a stay based on the number of nights and room type.
7. You’re working for a bank and need to build an interest calculator. Write a function that calculates compound interest based on principal, rate, and time.
8. You are developing a game. Write a function that rolls two dice and returns the sum of the values.
9. You’re tasked with creating a personalized greeting app. Write a function that takes a name and returns a greeting with the current time of day.
10. You are building a system for a coffee shop. Write a function that takes a list of orders and returns the total cost.

**9. Lists and Tuples (continued):**

1. You are managing a soccer league. Write a Python program that stores teams in a list and randomly assigns them to groups for a tournament.
2. You’re helping organize a conference. Write a program that stores attendees' names in a tuple and allows the user to search for a name.
3. You’re tasked with creating a contact book. Write a Python program that stores contacts in a list of tuples (name, phone number) and lets the user add, delete, and search contacts.
4. You are developing a study planner. Write a program that takes a list of subjects and study hours, and calculates the total time spent studying each week.
5. You’re building a car rental system. Write a Python program that stores available cars in a list and allows users to rent a car by removing it from the list.
6. You are working for a hospital. Write a Python program that keeps track of patient records in a list of tuples (name, age, diagnosis) and lets the user update the diagnosis.
7. You’re creating a package tracking system. Write a Python program that stores package IDs and delivery statuses in a tuple and lets users check the status.
8. You are managing a book club. Write a program that takes a list of members and allows the user to randomly pick a member for a reading recommendation.
9. You’re developing a weekly meal planner. Write a Python program that stores meals in a list for each day of the week and allows users to update their meal choices.

**10. Sets:**

1. You’re organizing a corporate event. Write a Python program to track the unique attendees from different departments using sets and display the total count.
2. You’re managing a university course registration system. Write a program that stores registered students in a set and checks if a student is already enrolled.
3. You’re working for a shopping website. Write a program to compare two sets of product IDs and find which products are common between two categories.
4. You are tasked with managing a gift exchange event. Write a Python program that ensures no two participants are assigned to give gifts to the same person by using sets.
5. You’re developing a music streaming service. Write a Python program that finds common songs between two users’ playlists using sets.
6. You are tasked with creating a name validation system. Write a Python program that checks if any letters in a name are repeated using sets.
7. You are developing a spam detection system. Write a Python program that compares sets of keywords in messages to detect common spam words.
8. You are a teacher managing classroom attendance. Write a program to track which students attended at least one class during the week and print the unique student names.
9. You are tasked with finding the unique customers who have made purchases from different branches of a store. Write a Python program that compares sets of customer names to find the unique ones.
10. You’re building a movie recommendation system. Write a Python program that compares movie genres watched by two users and recommends a movie from the genres they haven’t seen yet.

**11. Dictionaries (continued):**

1. You are tasked with building a product pricing tool. Write a Python program that stores product names and prices in a dictionary, and allows the user to apply discounts based on user input.
2. You are a manager at a café and need to track how many cups of coffee each customer buys. Write a Python program to store customer names and coffee quantities in a dictionary, then find the top buyer.
3. You’re developing a workout tracker. Write a program that keeps track of exercises and repetitions in a dictionary, and calculates the total number of repetitions completed in a workout.
4. You are responsible for a small retail store. Write a Python program that stores items and their quantities in a dictionary, and allows the user to update the quantity when new stock arrives.
5. You’re working for a museum and need to create an exhibit guide. Write a Python program that stores exhibit names and descriptions in a dictionary and allows visitors to search for exhibits by name.
6. You are tasked with managing an online forum. Write a Python program that tracks users and the number of posts they’ve made in a dictionary and displays the most active user.
7. You are working for a travel agency. Write a program that stores city names and distances from the office in a dictionary, and allows the user to search for cities within a given distance range.
8. You are building an online recipe app. Write a program that stores recipe names and ingredients in a dictionary and allows users to find a recipe based on a specific ingredient.
9. You’re developing an online grading system. Write a program that takes a dictionary of student names and their test scores, and calculates the class average and top score.
10. You’re building a music library app. Write a program that stores song titles and artists in a dictionary and allows users to search for songs by artist name.
11. You are tasked with creating a voting system for a competition. Write a Python program that stores contestant names and their vote counts in a dictionary and displays the contestant with the most votes.

**12. Miscellaneous:**

1. You’re organizing a coding contest and need to assign unique participant numbers. Write a program that uses a set to ensure no duplicate numbers are assigned.
2. You are developing a school attendance system. Write a program that tracks students using a dictionary and allows the teacher to mark each student as "present" or "absent" for the day.
3. You are tasked with creating a student project assignment system. Write a program that randomly assigns students to project topics using a list, ensuring no student is assigned the same topic.