**🔹 Part A: Functional Thinking**

1. **Greeting Based on Time**  
   Define a function greet\_user(hour) that:
   * Takes current hour (24-hr format)
   * Prints:
     + "Good Morning" if 5–12
     + "Good Afternoon" if 12–17
     + "Good Evening" if 17–21
     + "Good Night" otherwise
2. **BMI Calculator**  
   Define a function calculate\_bmi(weight, height) that:
   * Takes weight in kg and height in meters
   * Calculates BMI: bmi = weight / (height \*\* 2)
   * Returns BMI and category:
     + <18.5: Underweight
     + 18.5–24.9: Normal
     + 25–29.9: Overweight
     + 30+: Obese
3. **Leap Year Checker**  
   Function is\_leap(year) returns True if the year is a leap year, else False.
4. **Count Words in a Sentence**  
   Function count\_words(sentence) returns total number of words in the input.

**🔹 Part B: Math Logic**

1. **Sum of Digits**  
   Function sum\_of\_digits(n) returns the sum of all digits in a number.  
   Example: 123 → 6
2. **Armstrong Number Checker**  
   Function is\_armstrong(n) returns True if number is an Armstrong number.  
   *(e.g., 153 → 1³ + 5³ + 3³ = 153)*
3. **Fibonacci Generator**  
   Function fibonacci(n) returns a list of first n Fibonacci numbers.  
   Example: fibonacci(5) → [0, 1, 1, 2, 3]

**🔹 Part D: Data Formatting + Return**

1. **Currency Converter**  
   Function convert\_to\_usd(inr, rate=83.2) → converts INR to USD (default rate 83.2)
2. **Email Generator**  
   Function generate\_email(name, domain="example.com")

* Input: "John Doe" → Output: "john.doe@example.com"

1. **Password Masker**  
   Function mask\_password(password) returns a masked version  
   Example: "secret" → "\*\*\*\*\*\*"

**🔹 Part E: Code & Scope Logic**

1. **Local vs Global Debugging**  
   Create a global variable x = 50

* Define function that modifies x locally
* Define another that uses global x
* Print x before and after both functions

1. **Build a Mini Quiz Game using Functions**

* Use a function ask\_question(question, correct\_answer)
* Ask 3–5 questions and return score at the end