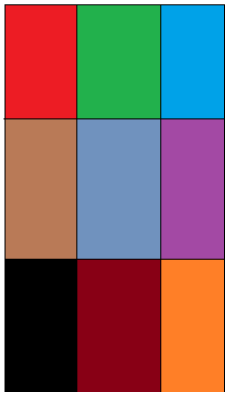
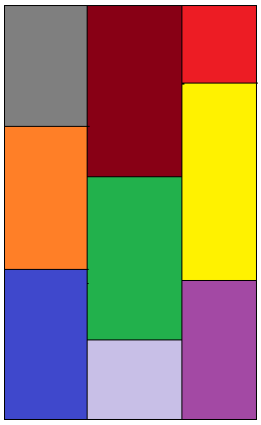
Lab	Type	Practical
Unit : I – Introduction		
1	**A.**	**WAP** to print your name in console.
	A.	**WAP** to Print addition of 2 number.
	A.	**WAP** to convert temperature from Fahrenheit to Celsius.
	A.	**WAP** to find percentage of 5 subject.
	A.	**WAP** that reads a number in meters, converts it to feet, and display the result. Body Mass Index (BMI) is measure of health on weight. It can be calculated by taking your weight in kilograms and dividing by square of your height in meters. Write a program that prompts the user to enter a weight in pounds and height in inches and display the BMI. Note: 1 pound=.45359237 Kg and 1 inch=0.0254 meters.
	B.	**WAP** to find the subarray with the largest sum from a given integer array. Example: Input: nums = [-2, 1, -3, 4, -1, 2, 1, -5, 4], Output: 6 (subarray [4, -1, 2, 1]).
	B.	**WAP** to check if a given positive integer is an ugly number (a number whose only prime factors are 2, 3, and 5). Example: Input: n = 6, Output: true (6 = 2 × 3); Input: n = 14, Output: false (14 includes the prime factor 7).
	B.	**WAP** to find all the prime numbers within a given range [start, end]. Example: Input: start = 10, end = 20, Output: [11, 13, 17, 19]; Input: start = 1, end = 10, Output: [2, 3, 5, 7].
2	**A.**	**WAP** to check whether the given number is positive or negative.
	A.	**WAP** to perform Addition, Subtraction, Multiplication, Division based on user choice using if, if..else..if, & switch.
	A.	**WAP** to find out largest number from given three numbers without using Logical Operator.
	A.	**WAP** to read marks of five subjects. Calculate percentage and print class accordingly. Fail below 35, Pass Class between 35 to 45, Second Class between 45 to 60, First Class between 60 to 70, Distinction if more than 70.
	A.	**WAP** to find out largest number from given 3 numbers using conditional operator.
	A.	**WAP** to make a Simple Calculator using switch...case
	B.	**WAP** to find the length of the last word in a given string, where a word is defined as a maximal substring consisting of non-space characters. Example: Input: s = "Hello World", Output: 5 (last word is "World"); Input: s = " fly me to the moon ", Output: 4 (last word is "moon").
	B.	**WAP** to calculate the angle between the hour and minute hands of a clock, where the hours and minutes are taken from the user. Example: Input: hours = 3, minutes = 15, Output: 7.5 (angle between the hands is 7.5 degrees).
	B.	**WAP** to find the majority element in a given array, where the majority element is the one that appears more than [n / 2] times. You may assume that the majority element always exists in the array. Example: Input: nums = [3, 2, 3], Output: 3; Input: nums = [2, 2, 1, 1, 1, 2, 2], Output: 2.

3	**A.**	**WAP** to print numbers between two given numbers which is divisible by 2 but not divisible by 3.
	A.	**WAP** to find factorial of the given number.
	A.	**WAP** to find whether the given number is prime or not.
	A.	**WAP** to print given number in reverse order.
	A.	**WAP** to print reverse string.
	A.	**WAP** program to calculate the sum of all positive even numbers and the sum of all negative odd numbers from a set of numbers. you can enter 0 (zero) to quit the program and thus it displays the result.
	B.	**WAP** to find the element that appears only once in a non-empty array of integers, where every other element appears twice. The solution should have linear runtime complexity and use only constant extra space. Example: Input: nums = [2, 2, 1], Output: 1; Input: nums = [4, 1, 2, 1, 2], Output: 4; Input: nums = [1], Output: 1.
	B.	**WAP** to count the occurrences of each word in a given sentence. Return a map where the keys are the words, and the values are the number of occurrences of each word. Example: Input: "this is a test this is a", Output: {'this': 2, 'is': 2, 'a': 2, 'test': 1}.
	B.	**WAP** to insert an element at a specific position in an array. The program should modify the existing array without creating a new one. Example: Input: array = [1, 2, 4, 5], element = 3, position = 2, Output: [1, 2, 3, 4, 5]; Input: array = [10, 20, 30], element = 25, position = 1, Output: [10, 25, 20, 30].
4		(Using **named** parameter, **positional** parameter, **default** parameter only)
	A.	**WAP** to calculate simple interest using method.
	A.	**WAP** to find maximum number from given two numbers using method.
	A.	**WAP** to generate Fibonacci series of N given number using method.
	A.	**WAP** to accept a number and check whether the number is prime or not. Use method name check (int n). The method returns 1, if the number is prime otherwise, it returns 0.
	A.	**WAP** to count number of even or odd number from an array of n numbers.
	B.	**WAP** to sort an array of names based on the corresponding heights in descending order. The names and heights are given as two separate arrays, and the heights are distinct positive integers. Example: Input: names = ["Mary","John","Emma"], heights = [180,165,170], Output: ["Mary","Emma","John"]; Input: names = ["Alice","Bob","Bob"], heights = [155,185,150], Output: ["Bob","Alice","Bob"].
	B.	**WAP** to remove duplicates from a sorted integer array in-place such that each unique element appears only once. The relative order of the elements should be kept the same. The function should return the number of unique elements in the array. Example: Input: nums = [1, 1, 2], Output: 2, nums = [1, 2, _]; Input: nums = [0, 0, 1, 1, 1, 2, 2, 3, 3, 4], Output: 5, nums = [0, 1, 2, 3, 4, _, _, _, _, _].
	B.	**WAP** to find the intersection of two integer arrays, nums1 and nums2. Each element in the result should appear as many times as it appears in both arrays, and the result should be returned in sorted order. Example: Input: nums1 = [1, 2, 2, 1], nums2 = [2, 2], Output: [2, 2]; Input: nums1 = [4, 9, 5], nums2 = [9, 4, 9, 8, 4], Output: [4, 9].

5	**A.**	**WAP** that prompts the user to enter 5 numbers, stores them in a List, and displays them in increasing order.
	A.	**WAP** to read 2 list and return list that contains only the elements that are common between them.
	A.	**WAP** that creates List with following value:“Delhi”, “Mumbai”, “Bangalore”, “Hyderabad” and “Ahmedabad” Replace “Ahmedabad” with “Surat” in above List.
	A.	**WAP** to create and read phonebook dictionary.
	A.	**WAP** to find friends detail by their name using dictionary. (Create local dictionary and search from it using Map<String,Object?> & Model Class).
	A.	**WAP** to accept n numbers in an array. Display the sum of all the numbers which are divisible by either 3 or 5 .
	B.	**WAP** to find the indices of two numbers in an integer array nums that add up to a given target. You may assume that each input has exactly one solution, and you cannot use the same element twice. The answer can be returned in any order. Example: Input: nums = [2, 7, 11, 15], target = 9, Output: [0, 1]; Input: nums = [3, 2, 4], target = 6, Output: [1, 2]; Input: nums = [3, 3], target = 6, Output: [0, 1].
	B.	**WAP** to find the largest odd integer (as a string) that is a non-empty substring of a given string num, which represents a large integer. If no odd integer exists, return an empty string "". Example: Input: num = "52", Output: "5"; Input: num = "4206", Output: ""; Input: num = "35427", Output: "35427".
	B.	**WAP** to remove duplicates from a list of integers. Return a new list that contains only the unique elements, with duplicates removed, using a map. Example: Input: nums = [1, 2, 2, 3, 4, 4], Output: [1, 2, 3, 4].
Unit : II – UI Design, State Management, Navigation		
6	**A.**	**Write a flutter code** to divide horizontal space of screen in 3 different equal parts with different colors.
	A.	**Write a flutter code** to divide the vertical space of the screen in 3 different equal parts with different colors.
	B.	**Write a flutter code** to divide the whole screen into 9 (equal size and the different size) with different colors.





7	**A.** **A.** **A.** **B.** **B.**	Write a flutter code to display "hello world" using **`Text`** widget**.** Change color & size of text using different properties. Write a flutter code to create a custom `Text` widget with different fonts & use it. Write a flutter code to use **`TextField`** and print the input value into the ***terminal*** using the controller. Write a flutter code to use **`TextField`** & apply different borders, floating labels, hint text etc., Write a flutter code to print **`TextField`** value into **`Text`** widget on a click of a **`Button`**.
8	**A.** **A.** **A.** **B.** **B.**	Write a flutter code to display an `Image` into the Image asset widget from the `asset` folder. Write a flutter code to display an `Image` from a WEB URL using a cached network Image. Write a flutter code to use `Stack` widget and show text upon an Image. Write a flutter code to create a birthday card using different widgets. Write a flutter code to roll a dice on the **`Button`** click event. Design splash screen as given in the sample attached.
9	**A.** **A.** **A.**	Write a flutter code to use **`TabView`** and display different pages on different tab clicks. Write a flutter code to use the **`NavigationDrawer`** & display different pages on different menu clicks. Write a flutter code to use the **`ActionBar`** widget and display menu in it and display Alert `Dialog` on menu click.
10	**A.** **A.** **B.** **B.** **B.**	Write a flutter code to create login screen login for username & password using `Textfield`, `Button` etc., Write a flutter code to do validation in the login screen. (Email Validation & Password Validation) on `Button` click. Write a flutter code to create a registration screen using different widgets. Write a flutter code to do validation in the registration screen. Add password visibility icon in the `Text` field.
Unit : III – Scrollable Widgets, Dialogs & State Management		
11	**A.** **A.** **A.** **B.**	Write a flutter code to display list of city in to listview. (Static list in List<String>) Write a flutter code to display list of image in gridview with static data. Write a flutter code to display image and text in gridview with static data. Write a flutter code to display data in listview. Place switch button at top bar. Click on switch button change view as gridview to listview and vice versa.

12	**A.** **A.** **A.** **B.**	Write a flutter code scroll whole screen content using single child scrollview. Write a flutter code to use listview/gridview inside single child scrollview. Write a flutter code to get current date from system and format into different date formats. Ex. dd/MM/yyyy dd-MM-yyyy dd-MMM-yyyy dd-MM-yy dd MMM, yyyy etc. Write a flutter code get date frod date picker dialog and display in textview.
13	**A.** **A.** **A.** **B.** **B.**	Write a flutter code to open bottom sheet on button click. Write a flutter code to create and use navigation drawer. Write a flutter code to use the `bottom` **`NavigationBar`** & on click display different pages. Write a flutter code to create form using different widgets and do validation on it. Write a flutter code create form using bottom sheet dialog.
Unit : IV – Database Connectivity & Navigation		
14	**A.** **A.** **B.**	Write a flutter code to do `navigation` between two different pages using a material page route. Write a flutter code to do `navigation` between two different pages using a name route. Write a flutter code to create a dynamic Birthday card.
15	**A.** **A.** **B.**	Create different tables for the to-do list app in SQLite and attach a `.db` file with the flutter project. Use db queries to get records for the practica. • Select All Data • Select data using join Query table and display data in terminal using print.
16	**A.** **A.** **B.**	Write a flutter code to design To-Do list insert screen and do validation on it. Write a flutter code to insert data into the table. Write a flutter code to fill country list in dropdown and then fill Satelist based on selected country and then fill city dropdown based on state.
17	**A.** **A.** **B.**	Write a flutter code to list data into the `List` view. Write a flutter code to display a list with different colors with different priority. Write a flutter code to sort data by options: A->Z & Z-A.
18	**A.** **A.** **B.**	Write a flutter code pass data from list to edit page and edit record in table. Write a flutter code to place delete button in list page and on click delete button show alert dialog for confirmation for delete and delete data from table and refresh the page with updated data. Write a flutter code to delete data from table and from list and refresh page.

Unit : V – Accessing Rest API & Application Deployment		
19	A. B.	Write a flutter code to fetch json file from asset folder & parse json data and display data in widget. Write and flutter code to generate model class from json.
20	A. A. B.	Write a flutter code to call rest api (using Mockapi) with **GET** Method with httpclient library and display data in List widget using future builder. Write a flutter code pass **Path Variable** and **Query Variable** as parameter in GET Method and display single recod in full screen page. Write a flutter code to call rest api and display data in listview.builder with pagination (Lazzy Loading).
21	A. B.	Write a flutter code to display country list in dropdown on selection of country call state api and fill data in state list after selection state call city api and fill city list in driodown. Write a flutter code call nested api (prefill 3 dropdown before).
22	A. B.	Write a flutter code to design entry screen with Name, DOB, City, Address, etc.. validate it & save data to webserver using **POST** method with formurlencoded. Write a flutter code to refresh list with updated data without creating new instance of list screen.
23	A. A.	Write a flutter code to request camera permission from user capture image using camera and store in external storage. Write a flutter code to display image from gallery using image widget.
24	A.	Develop UI/UX for the application designs. • Login Screen • Registration Screen
25	A.	Develop UI/UX for the application designs. • Listing Screen • Add/Edit Screen
26	A.	Create database to do backend programming. • Database Schema • Tables • Stored Procedure • etc…