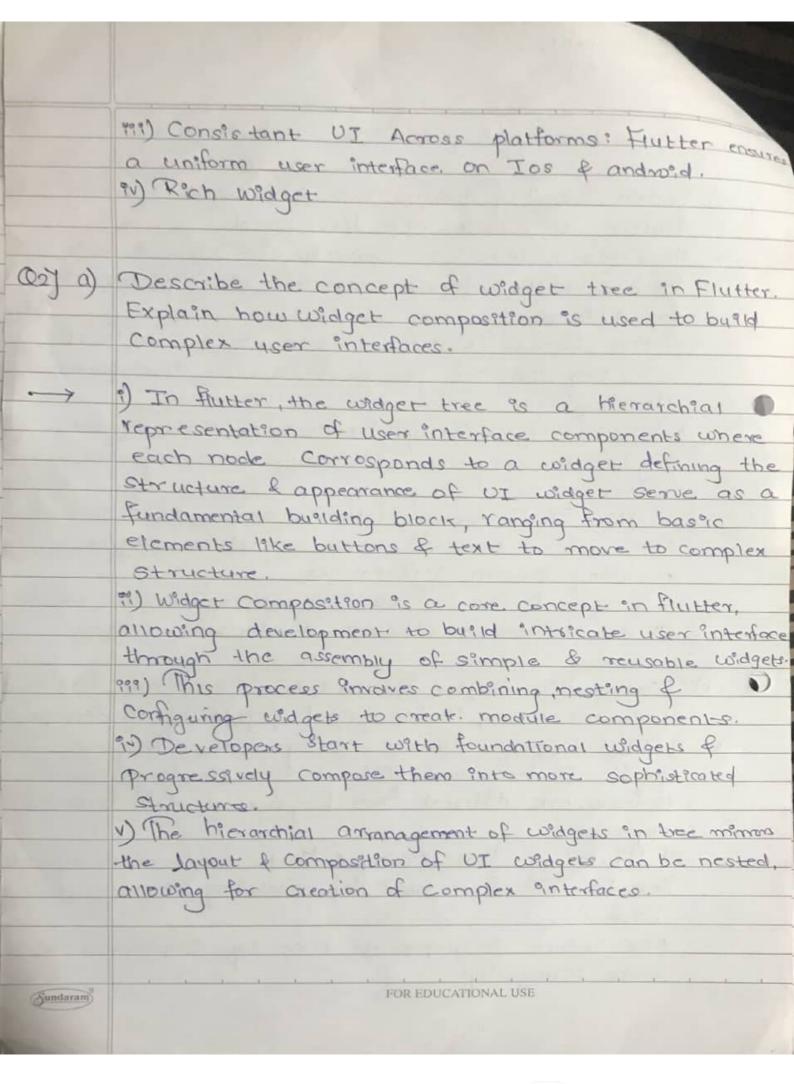
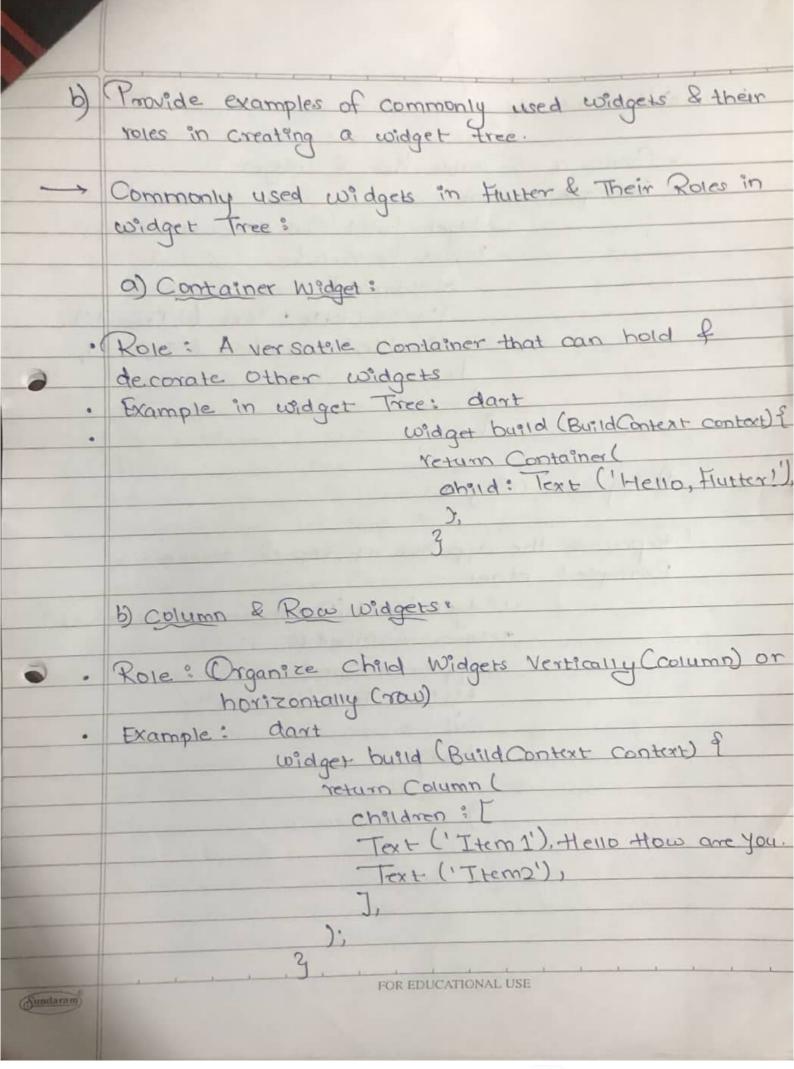
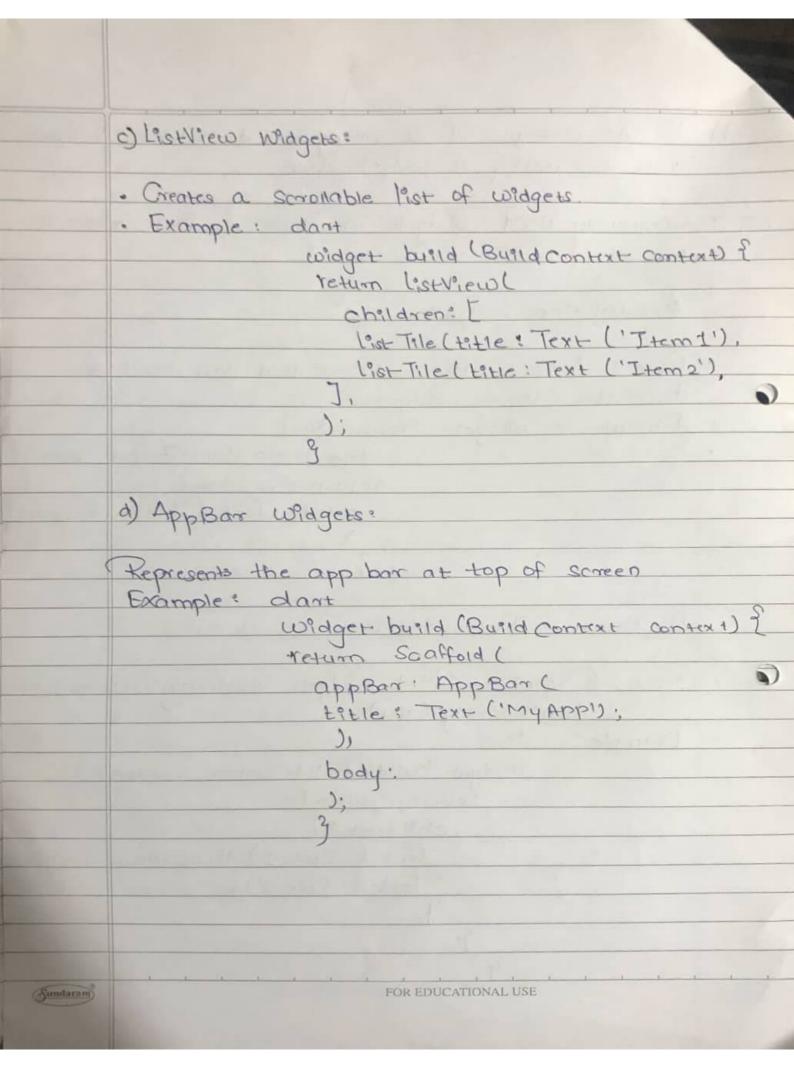
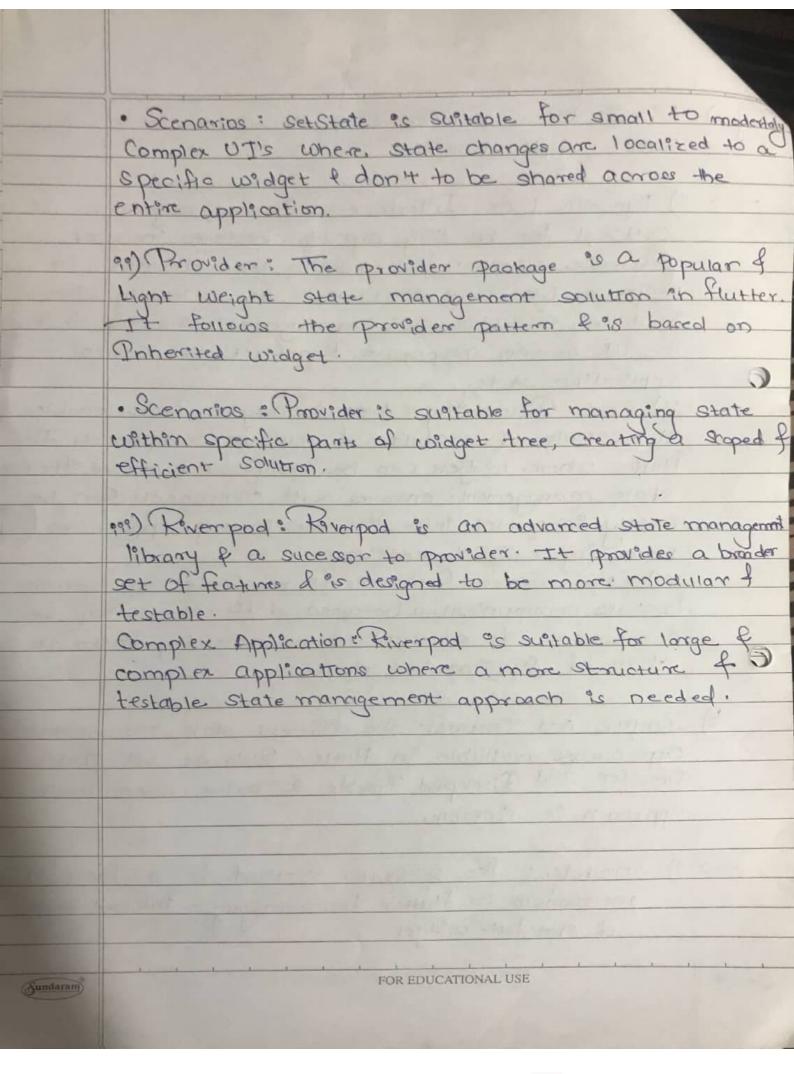
Mame: Hoga . Panjuani Class & DISB Rollno: 51 Assignment - 1 Qi a) Explain the key features and advantages of using flutter for mobile app development. i) Single codebase: Develop for ios and android from a unifide codebase, reducing development time and efforts ") Hot Reload: Real time, code changes without restarting the run process, enhancing development effeciency. iii) Rich Widget library: Pre-designed, Costomizable wegdets for consistant & visually appealing user interface. 1) High Performance : Flutter Compiles to native ARM gode & uses the skia graphics engine, ensuring smooth Performance v) cost effective: Reduce development cost with Single codebase & efficient development process b) Discuss how flutter framework, differs from traditiona approaches & why it has gained popularity in development 9) Don't Language: Flutter employs don't, a language Specific to framework, different from platform specific to framework different from languages used in traditional approach ii) Efficient & Time saving " Hutter reduces development time for ios & android by enabaling single code base. Also reduce development time by implementing gode reusability. FOR EDUCATIONAL USE (Sundaram)





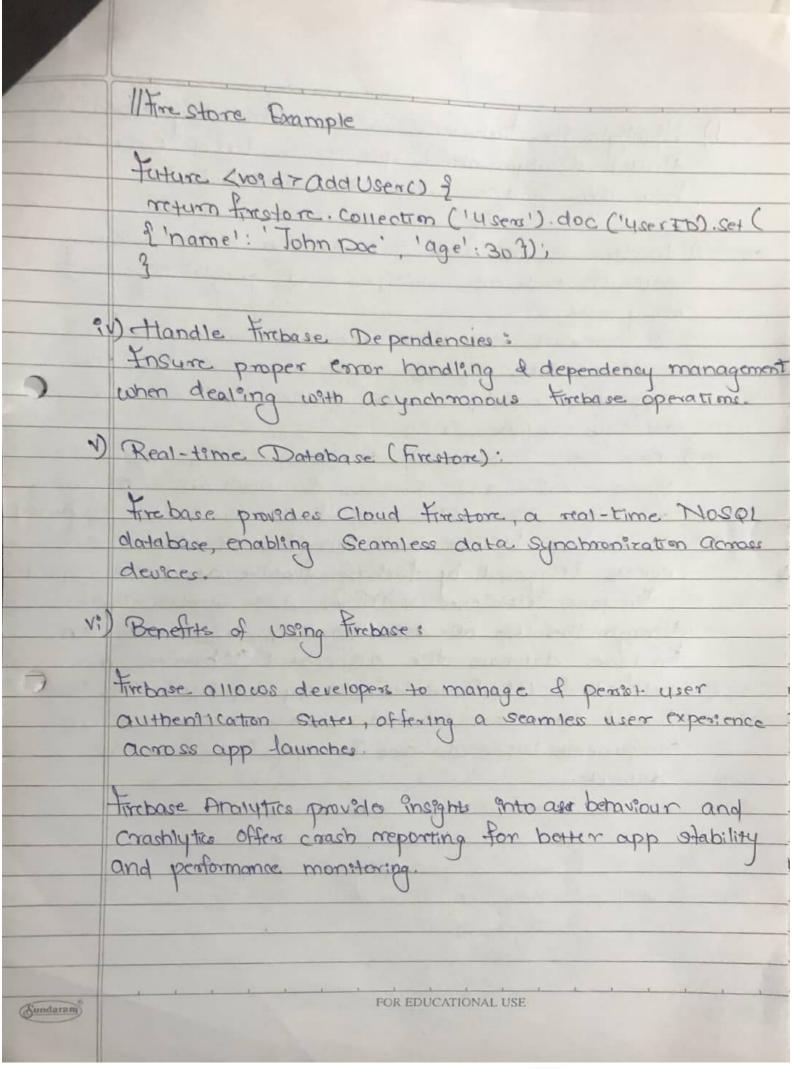


a3 a) Discuss the importance of state management in flutter applications. -> ?) Dynamia Wer Interface: State Management is Therface. Whether its updating UI elements in Mesponse to user interactions or reflecting Changes In data, effective state management ensures that the UI remains responsive & neflects the coment application state. ii) Code Reusability: Well managed state enables the creation of modular of reusable components. In flutter, where widgets can be composed of reused, effective State management ensures that components can be easily integrated into different Parts of application, promoting a DRY codebase 999) Cross Screen Communication: State management faciliates communication between different screens or components of an application, allowing them to share & synchronize data. b) Compare and Contrast the different state management approaches available in flutter Such as Set State, provider and Riverpod Provide Scenarios where each approach is Suitable. -> i) SetState: The setState method is a built in mechanism in flutter for managing internal state of stateful. widget. FOR EDUCATIONAL USE (Sundaram)



application. Discuss the benefits of using firebase as a backend solution. -) Create a Firebase Project: Start by creating a project on firebase console fconfigure In your flutter project, add the necessary dependencies by updating the pubporymitible: yaml dependencies: Frebase Core: "latest version tirebase auth: " latest. veragon Cloud - firstone: "latest version Run flutter Pub get to fetch dependencies: ") Inothalize timbase: Pritialize firebase in your flutter app by calling firebase. CopyCode Proport 'Package: firebase core/firebase core dart'; FOR EDUCATIONAL USE (Sundaram)

void main async of Widgetstrutter Binding . ensure Initializedo; await tirchase initialize Appl); run App (my Apply); () Use fribase semices : Start using Firebase services like authentication, Firestore, or Other in flutter App by importing the relevant packages of instalizing them using the trabase project medentials Copy Code import 'Package: Frebase auth/frebase auth dant'; Import 'Package: Cloud Arestore/Cloud Frestore.dant; 1/ Example Authentication Firebase Auth auth = Firebase Auth. Instance; user ! user = auth, ament-user; Il Example & Cloud firestore = timbase tirestore . Inchance; Authentication and Database Operations: Use Firebase authentitation to manage user sign-ine, sign-buts & user data. For firestone perform CURD operations to Interact with database. (Sundaram) FOR EDUCATIONAL USE



b) Highlight the firebase services commonly used in flutter development & provide a brief overview of how data. Synchronization is achieved. methods such as email/password, google sign-in & many more in A non-SQL real time database that allocas for scamless data. Synchronization access devices. It Supports complex queres, offline data ances & real-time update or) An older, Ison-based database offering real-time Synchron " cotton. Its systable for apply atton orequiring a simple Ison structure & real time data up dates. 91) Senver-less functions that run in response to an events triggered by firebase feature as HTTPs request. · tirestone achieves realtimes data synchronization through the use of data libraries. When data in Threstone database the associated 10 branies are notified & UI is automatically updated. This is based on the observer, pattern, where the UI Components takes changes to specific data in dataset. FOR EDUCATIONAL USE (Sundaram)