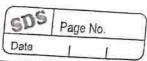
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1	MAD ASSIGNMENT NO 1
OI	SCHOOL SECTION STATES AND SECTION OF THE SECTION OF
aj	Explain the key features and advantages of using -
7	17 sinde codebase Don Multible Watforms write on
	1] Single codebase for Multiple platforms write on - codebase for both Android and los neducing
	development effect and Maintainance.
	2] Not Reload Instantly see changes in the app without
	nestarting making development faster and more interactive
	3) Fast respondence: use the don't language and a
S.	compiled approach for smooth and high performance app
4	4) open sounce & strong community support: Bocked by
	google and a large developer community ensuring
E 1	continuous improvement and resources.
	Advantage:
	il Foster Development Time: Not reload and sengle
Ser.	codebose reduce development time significantly -
	2) cost effective: since the same code run and both -
	Inducid and is, business save on development and -
	2) Radius Karlandage issue : The old me asked it
V	3] Reduce performance issues: The off run notively without- relying on intermediate bridges like in react native -
	reducing log
[d	Discuss how the flutter framework differ from tradition-
	Discuss how the flutter framework differ from tradition-
	the developed community.
3	il sind a sadahase is separate codebase
1	· Thaditional Approach: Developers needs to write approache
V	
-	

The state of the s
bicrarchial arrangement of widgets with each widget
design a part of the user interfore. Hutters uz
is entirely built with using width will which can be
stateless on. The width tree determines how the uz is
rendered and updated when changes occurs
widget component in flutter:
widget component refers to building complex us by
combining smaller reuseable widgets Instead of creating
large Mondithic UI components, Hutter encourages the
us into smaller Manageble widget that can be neved -
and nested with each other
fromple: class profilerand extends stateless widget &
final string nam;
final string image unt;
profile cond (? neguired this name, neguired this image us 1),
@ overside.
widget build (Build content content)?
neturn cond (
child column (
children [
iMage · Detwork (iMage·UNI)
Sized Box (height: Io)
Tent (name, style: Tentstyle (front size: 20, fontweight: -
Fontweight bold,)
January Comments of the Commen
3
Benedita an war att combosition
Benefite of weight composition
1 1803 03/11/4 31/100
part of the app
2) Maintainability: Breaking uz into smaller widget Make
It easy to debug and update

Separate code for Indraid (Java) koppin) and ios (swill · Hutter uses a single don't based codebose for both platform reducing development time and effect 2] Rendering Engine us Native us components. Traditional Approach ? Relies on platform notive UI compent which can lead to inconsistencies and perpo issues flutten. uses the stic mendering engine to di everything from scotich ensuring a consistent ux Why flutter has gained popularity.

if Foster development with hot reload. Developers instantly see us changes without nestarting the of Making the iteration process much quicker. 2) cross platform efficiency: Business sove time and Mesources by Maintaining a single codebase for Mult 3) consistent uz denose devices. Since flutter does not nel notive component the UI looks and behave the across different os versions 4) Improved performance: Aux compitation and direct to GPO mendering ensure smooth animation and high per 92 Describe the concept of the widget free in futter . Exp how widge composition is used to build complex us intenfaces. widget free in plutter In flutter the widget true is the fordamental structured structure

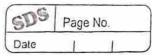


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	dild: Text (" Sobmit")
	- 40 - 10 -
	July 41 had the sea of the sea of the
	37 Dishler of all
	3] Display of styling widget
	Cospical Col On May On the
	· Image - shows image from assets network or Henory
	· Icon - Display Icons.
	· cand - & Material design cand with rounded conners
	The state of the s
	Ex: column (childnen:[
	Text (" valor a b 11 11)
	Text ("welcome to flutter!", style: Textstyle (font size: 24;
	There is a brook ("144) fontweight: fontweight - bold)
	flutter dest image / flutter - logo -
	Sharing png?
	THE RESERVE THE PROPERTY OF THE PARTY OF THE
	The Market of 1998
	Discuss the important of state Management in flutter application
)	to flutter, state negery to data that can change durning
/	the Ofetime of an opplication. This includes.
/	- user input
1	- UI changes
1	- Network change
1	- doirection state.
3	

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	3] Performance: Flutter efficiently nebuild only the necessary
	3] Performance: Flutter efficiently nebuild only the necessary part of the widget here
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
<u> </u>	Provide example of commonly used widget and their ro
٦	1) structural widget:
	There widget not as Mandali A. I. VI.
1	
<u> </u>	that provides essential configuration
	The state of the s
A 100 to	on opp ber body flotting action button et
	William William William Col II
1 1 3	· container: a vensable widges used for styling, padding Mangin and background customization Ex: Material Alal (
	Ex: Moterial Obl (
	home: Scolled C
- 48 4	Come: Scaffold (
	opp Ben: AppBar (title Text ("flutter widget Thee body; container (
H	File Locato
CAR DATE AND	Podding: Edge Insect all (16.0)
Sundan	child. Text ("Mello, Flutten!"),
	child. Text ("Mello, Flutter!"),
	child. Text ("Mello, Flutter!"),),
	2] Inbut 2 -1
	2] Inbut 2 -1
	2] Inbut 2 -1
	Input of Interaction widgets Test feeld - Localet test input from users. Elevation Button . A R.H.
	Input of Interaction widgets Test feeld - Localet test input from users. Elevation Button . A R.H.
	2] Input of Interaction widgets Test feite - Accept test input from users. Elevation Button . A Button with elevation gesture Detector: Detectors gesture like tops, swipes and presses.
	2] Input of Interaction widgets Text feited - Accept text input from users. Elevation Button . A Button with elevation gesture Detector: Detectors gesture like tops, swipes and Exp: column (
	2] Input of Interaction widgets Text feitd - hareft text input from users Elevation Button. A Button with elevation gesture Detector: Detectors gesture like tops, swipes and the column (children. [
	2] Input of Interaction widgets Text feitd - hareft text input from users Elevation Button. A Button with elevation gesture Detector: Detectors gesture like tops, swipes and the column (children. [
	2] Input of Interaction widgets Text feited - Accept text input from users. Elevation Button . A Button with elevation gesture Detector: Detectors gesture like tops, swipes and Exo: column (
	Imput of Interaction widgets Test feeld - Scrept test input from users. Elevation Button . A C.H.

	There are two type of state.
	I Epheneral state: Small, UI Specific state Mat doesn't
	affect the whole app
	2) App wide status: Date stored across Multiple win
	State Huiggener
	- efficient uz updates: Flutter's uz is nebuilt whenever ste
	charges Effecient state Hanagement ensure that only not widgets one update improving benjonnesses
	- code Mointainalilit & D. I'm
- 1	Make the and wanding style propen
S	charges effecient state Hanagement ensure that only no windgets one update, improving performances - code Maintainability & Scability: Managing style prepen Make the code Modular nedable and scalable propen application.
	- Data consistency of sunch monitor biggs
	ensure that data remain consistent as
	- Data Consistency of synchronization: proper state Mar ensure Most douts memains consistent ocross different Screen and widgets
11	
-61	compare and contract the different statemanagement approaches avaliable in flutter such as setstate, provides and Riverpad. Provide Senations
1	havile avaliable in flutter such as set state.
4.	provider and Riverpad. Provide Scenarios where a setstate. local state
3	Setstate local state
	Cons - Not scalable
100 M	VI DI ODIO
	of opposite (eg-toggle, switch,
3	Michael - App uside at 1
	The second of
	cons - Boilesplate code for nested providers. Best use case - Medium scale app (eg. Authentication, the
	Best use case - Medium scale of les Authentication of
	APZ data)
	The state of the same of the s



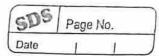
verbod App: wide state (More scalable than provider)
Pros- Eliminates Providers limitations improves performance
cons - Require learning new concepts.
cons - longe ebb needing global state (eg
Best use cases - longe app needing global state (eg
Water Stopping
Secnotion for each Approach. Secnotion for each Approach. Managing simble ut element within
Secnotion for when Managing simple us element within
a single widget like toggling dank Mode in a
setting screen
use provides when storing state ocross Multiple widgets
such as Monaging user authentication or there changes
use Riverpod when building a scable app with global
state monagement, like on ecommence app with cant
Monagement.
and he discharge with a
Explain the process of integrating finebase with a flutter application. Discuss the benefits of using finebase
flutter application. Discuss the benefits of
such of serion les
Hirebose provides a powerful backend solution for
flutter application offering services intorage and Home
heal times database cloud functions
Firebose provides a powerful backerd soronome flutter application offering services like authertication heal times database cloud functions, storage and more steps to integrate. Firebase with flutter
Step 1: create o firebase project
- go to finebase console enter a project name
- go to finisher console - go to finisher console - click an "Add project" and enter a project name - click an "Add project" and enter a project name - configure google analytics if needed, then click create
- configure google analysis

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	The set out allower wester to be the time the set of th
	Step 2: Register the flutter opp with firebore - In the firebose project dechboard click "add App" of Select Android on ios based on your platform - For Indroid: Enter the android backage some
	- In the firebase project darboard click "add Abl"
j	select Android on ior based on your platform
_	- For Indroid: Enter the android package name and
	abuntoad the google services is on file and bless
	Charles and the control of the contr
	- Jos ioc.
	Solar Mu jos Rundle identifer Download Mu google service-imp-plist file and place it in a jos swnner
	stile and blace
	Step 3: Install finebase dependence. Add finebase dependence in subsps. yan! finebase core.
	Add Divila likebase dependence
	Digebose come dependence in rubspse. yant
	Pinehace and
	cloud Pireston
	Run flutte nub get
	frence two get
	step 4 : configure Firebase por android & ios por Indre
-	if open android / build android & ios for andre
-	classipath 'com appale and ensure the f
	2) open android/ old 1900gle-services 4.3.10:
	bottom alphy blucio: and ghodle and add at M
	John android / build gradel and ensure Mu felassipath 'com google grus google - services - 4.3.10; 2) open android / app / build gradle and add at M botom apply plugin: com google, gree google - services
	Steps: Initialize finebase in 11.11
1	Steps: Initialize firebose in flutter void Main () osyne (
1	widget flutter Binding ensure Initialized (); await firebox initialize app (); runapp (my App ());
	await fireban initialized ();
	runapp (my App ());
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Benefits of using finebase	
tirebase is a Backerd as a service (B)	205) that simplifier -
	ar some key -
gory:	white I
I fasy to selup & scale	tain -
No need to Manage backend infrastru	ichre -
scales automatically based as usage.	
2 Luther Deathon	and the la
Provides email/possword, google, facebook	and blance out act
CODON	
seamless integration with firebase Juty	entication
21 6101101 5700000	
Secure file storage for image, video of Push Notification (firebase cloud Messac time notification to user across different	ad doorwood
4) Push Notification (Pirebase cloud Messon	ina) and had
time notification to user across dippor	to lelation
of the second se	N Platory.
Mightight the firebase services commonly development and hyporide a build	1100d 20 01. H
development and brouide a brief over	less of the
synchronization is achieved.	ew of now daya
Firebose provides a suite of backend	Sauce W. L
Simblify Olythen del decololerant	SKAPICU MEJ
3 tirebose Luther heation	The state of the s
Emobles come I by to	71 L 1 3 3 3 1
Emobles secure authentication using en	Cal I posswond,
phone number and Mind party provio	les like google,
facebook and apple	417 1/4/2
al alandar de la companya de la comp	100 (d) 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
2) cloud finestone	Set 1000
Store and syncs data in real time	across devices
Support structure data queries and of	Prine accus
eg : Finebase Finestore instance collection	o ('users') odd (§
'name': ' John Doe'	
'espail': Johndoe @ example. co	ом.

3 Realtime Database A realtime Ison-bosed database that automically data across devices. ex: Database Reference ref = firebase Database instance. ref (ref ict (ret". Mello, firebase!"3); 4] Finebase cloud Messaging (FCM) Enable push notifications and Messaging between Ex. Firebose Messaging. instances. subscribe To Topic l'news 5] thebase Looly bics. Thack user interactions and app performance

Ex: firebase Analytics analytics firebase Analytics instances
analytics log Event (nome: button clicked", parameters:

E"button": "subscribe"]; 6] Firebox Mosting Deploye and serves web applications security Data Synchronization in firebase.

Firebase ensures neal-time data synt synchronization across Multiple devices and platform using fineston and realtime Database I cloud finestone sync Mechanism uses realtime listenery to update us instantly when changes Et : Firebase firestone instance collection ('users") . snopshots lister ((snapshot) & for (van doc in snapshot-docs) {

print (doc [name']

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2) Realtime Databose sync Mechanism:
2) Realister Data orse signice to some for live updates -
Ex: Database Reference nef = firebase Database instance ref
ref. on value - lister ((event) ? ("Message")
print (event. snapshot-valve);
Les persistent web sacket connections for live updates— Ex: Database Reference ref = firebase Database instance ref ref on value - lister ((event)? ("Message")— print (event · snapshot · value); 3);
offline Data sync. Jinestone caches data locally and synce changes when The devices is online The devices is online The divides finestone instances setting settings (Pensistence
The devices is online
The devices is online ex: Finebase finestone instances setting settings (Pensistence Enabled true);
Endow.
of cloud function for automated updated. Libraries backend logic to trigger updates when
of cloud function for automated updated. Lubomates backend logic to trigger updates when data changes
data eronges

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