1. With your knowledge on application development frameworks provide the framework solution you would propose to develop "ToDoNotes". Justify your answer

Out of all the Mobile application development frameworks React Native is the one that stands out in the Application development industry, it was created by Facebook and it is an open-source framework that everyone can use to develop mobile applications for android and IOS platforms, and this means that companies can save time and resources by creating a code that two platforms can use. Most frameworks use different types of Programming language. compared to other frameworks react native uses one of the most popular programming languages called "JavaScript"

Apps like Facebook, Instagram, Uber eats, Pinterest and many more were built by using React Native.

One of the main benefits of using react native is "UI Focused" which means that it helps to develop great user experience for mobile devices, small applications like todonotes will look nice and will feel nice too and there are more benefits like this which gives a reason why you should choose react native as a solution to build mobile applications.

2. Compare and contrast your frameworks with other available mobile frameworks stating the pros and cons (3 points each for pros and cons)

Flutter

Flutter is a cross-platform app development framework developed by Google in 2019 so compared to other framework this is relatively new and it uses the Programming language called Dart, is an object-oriented programming language which is very fast and easy to learn. The platform is very customizable with readymade UI elements that can be implemented into any app. It is one of the frameworks that people might say which will overtake react native in the near future.

Pros –

- **Faster Apps –** Flutter uses the Skia Graphics library that means the UI will be smooth and will deliver 60fps.
- **One codebase** – Developers can write just one codebase for two mobile platforms.
- **Hot reload –** this is a feature that allows developers to that make any changes in the code to appear in the app instantly. This will cut down on the bug fixing time and the developers will be able to do experiment with the app easily

Cons –

- **Slowly growing developer community –** compared to its counterpart (React native) flutter does not have a large community behind it. If you run into bugs, you will have a hard time trying to understand the issue and less features will be implemented
- **App's size –** Apps written in flutter are more immense than native ones which means the app size is huge compared to react native.
- **Dart Programming Language-** Dart is a new programming language so many businesses might find it hard to get individual who excel in this language

React Native

React Native is an open-source JavaScript framework that was designed for building apps on multiple platforms like android, IOS and also web apps. It is powered by React and developed by Facebook. It uses JavaScript to produce the app's interface unlike other competitors.

Pros-

- **Community Support**- React native has a massive developer community and so many tutorials, UI frameworks and libraries.
- **Uses JavaScript –** JavaScript is one of the most popular programming languages among many developers.
- **One codebase for two platforms –** using a single codebase to make apps for two different platforms.

Cons-

- **Poor Memory Management** – React native is not that well with memory management because of its JavaScript based frameworks.
- **Low Security –** Since it's an open-sourced framework other developers can penetrate the app easily with set of code for this reason banking apps are not made by React Native.
- **Abandoned packages –** Since it has a vast set of libraries many of these are either abandoned or in low quality

3. Suggest a value-added feature for "ToDoNotes" showing your creativity

A value-added feature would be how it looks and feels. There are animations in the app to make it look nicer and the colors that I have chosen are I would say quite good and modern. Most ToDoNotes looks boring and basics but this would be the quite the opposite compared to the basic ones.

4. What are the considerations done when deciding a mobile application framework?

There are many things that you should consider when looking into a mobile application framework and those are,

- **Usability –** it should be easy to use and work the way developers expect it to without any hassle that would leave to excessive time waste.
- **Costs –** Making a mobile application is quite expensive so you have to be aware what gives you the options for the cost of the application. Some application might be expensive to make but will you get the result you need? Is the question you should think about when it comes to cost
- **Security –** in the age of increasing data breaches and mobile apps you must consider how safe your app can be. Choosing a safe and secure framework will help your application and your users to be safe from these breaches.
- **Platforms –** The Main two platforms for mobile market at the moment are IOS and Android, you have to consider which application platform you are targeting your mobile app to be in but some mobile app frameworks allow you to make apps that support both platforms in one codebase.
- **Efficiency –** when choosing the best framework to use you have to understand not all the frameworks run on the same programming language so if the framework runs on the same language that the developer efficient on this will help you ensure that the final output done by the developer will be high quality.
- **Lifecycle Management-** Once developers build an app their job is not done yet. They must test, host, deploy, maintain and analyze its usage throughout its lifecycle bring new features through user data and they should make sure that during the lifecycle of this app nothing should break or damage the application.

5. State your favorite mobile application explaining why

<u>Discord</u>

Discord is an instant messaging social platform that users have ability to communicate with each other through voice calls, video calls and text messages. It is quite different to other social platforms because you can be part of certain communities and meet people with same interest. You usually meet people in "Servers" which is similar to a group messaging system but you can have around 100 – 100,000 people in this server. Discord mostly runs on many platforms but many people use it on windows and recently they have been trying to make their mobile application look and feel better for a good user experience.

Within one year there have been massive updates to the mobile application which are good. It helps me to communicate with my group of friends easily and to share content too without losing it in the chat.