



**Q1:** \_\_\_\_\_ (100points)

You should prepare the Software Requirements Specification (SRS) for the following project outline:

**Covid-19 Track and Trace App**

The continuing spread of COVID-19 has prompted many new interventions such as lockdowns and social distancing, and the situation has prompted a number of innovative uses of technology to assist people in adapting to the new normal.

A critical factor in dealing with the spread of COVID-19 is identifying new cases and isolating them before they spread. This has led to efforts to track and trace those who come in contact with an infected individual with the goal of preventing the further spread of the virus.

Almost everyone has a mobile phone now, and these devices provide support for collecting information on users' movements and proximity to other users.

You will develop the specifications of a robust and effective track-and-trace mobile app that can reliably provide the data needed to stop the spread of the virus. There are numerous complications of such an undertaking, and they all must be considered throughout the development process.

There are a number of high-level requirements:

- **Hardware:** The app must run on all common mobile devices.
- **Identity:** The user and those around the user must be represented anonymously and securely.
- **Proximity:** The app must be able to identify encounters with other phone users. Again, security concerns must be addressed with this functionality.
- **Communication:** Data must be shared and processed securely.
- **Hotspots:** The app should show information about local hotspots to the user and warn them if they approach too closely.
- **Motivations:** Users need to trust the app to use it.

You can take the SRS templates provided, and include or exclude sections as appropriate.

For the development of the SRS, you can imagine that you are the manager of a software company (eg. [Nearform](#)) who is bidding for a contract to develop a track-and-trace for a National Health Service (eg. [HSE.ie](#)).

You will not develop an application, but a list of the requirements in the form of an SRS. The SRS should provide a clear overview of the architecture of your application, and include diagrams as appropriate.

The design and specification of the app should be clear from the SRS document.

You should tackle the specific requirements requested above. There are many examples of Covid Apps <sup>1</sup> and while they are similar in their approach to privacy and contact tracing, they do not all work the same way. In particular, there are few which provide information about hotspots which you are recommended to avoid. In particular, most of the app seem to struggle to balance function with strict privacy requirements <sup>2</sup>. You should consider these issues in your SRS. Finally, your task is not to develop an application! You should think about the requirements and the design of the app. The focus should be on the higher level requirements (no need to specify low level tools or languages). Rather than a long list of requirements, I prefer to see a strong design with a well-chosen set of requirements which give a clear understanding of how the application will work and how it could be built (if you are awarded the contract).

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<sup>1</sup>[https://ec.europa.eu/info/live-work-travel-eu/coronavirus-response/travel-during-coronavirus-pandemic/mobile-contact-tracing-apps-eu-member-states\\_en](https://ec.europa.eu/info/live-work-travel-eu/coronavirus-response/travel-during-coronavirus-pandemic/mobile-contact-tracing-apps-eu-member-states_en)

<sup>2</sup><https://www.washingtonpost.com/technology/2020/08/17/covid-tracking-apps-cellphones/>