

# *Covid-19 Tracing App Form Designs, Database Schema, and Table Designs*

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ITEP204 Final-Term Project

Last Day of Submission: Sunday

(18 July 2021)

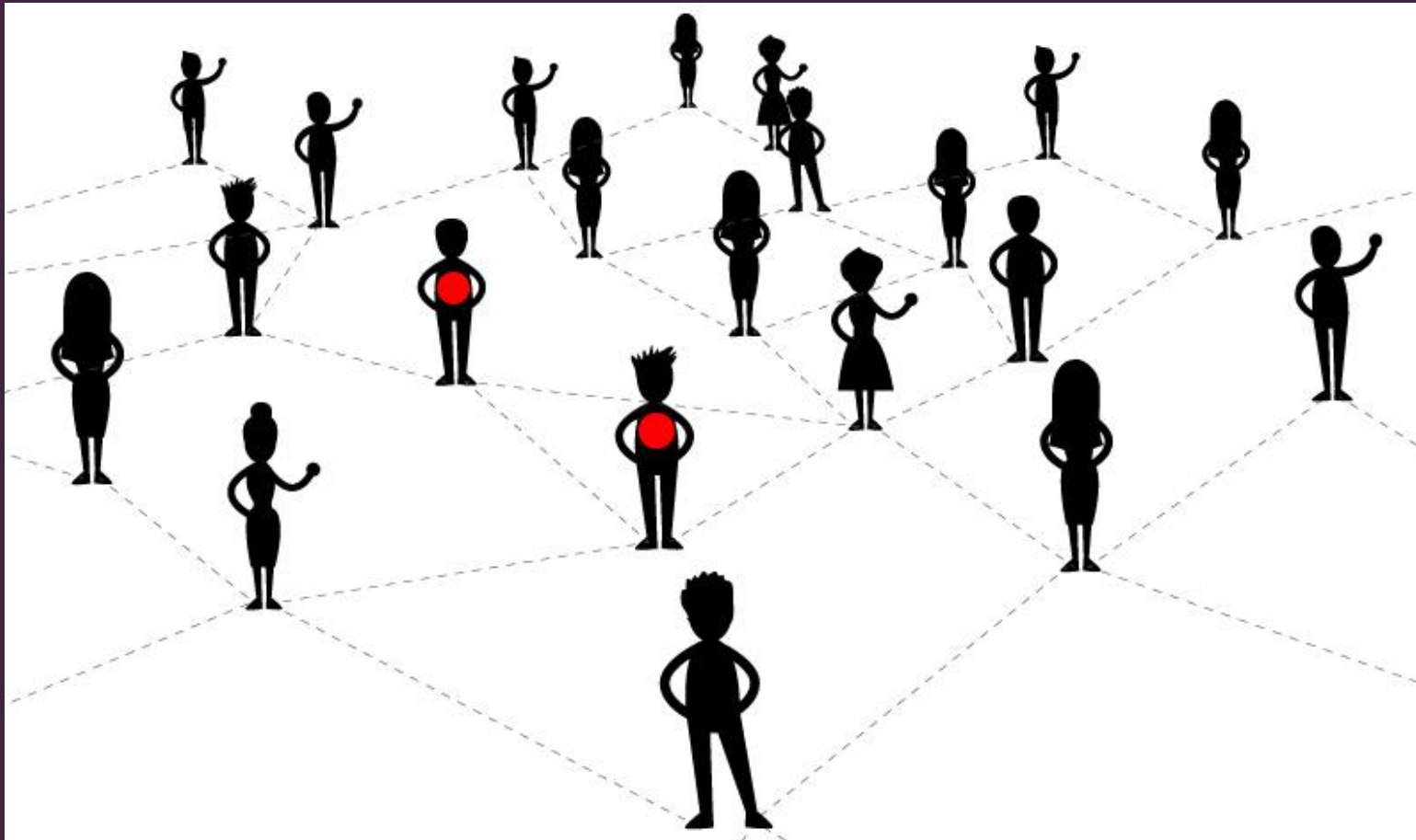
# *Overview of the Project*

- **OBJECTIVE:** The following Final-Term Project Requirement aims to aid students in integrating what they learned in Advance Database Systems, especially in the Analysis of Requirements and Design of the corresponding possible Database Design Solution.
- **PRE-REQUISITES:**
  - Knowledge in using the Peter Chen ERD Notation in diagramming database schemas.
  - Knowledge in Database Normalization.
  - Converting Database Entities with Related Attributes and Keys (drawn using Peter Chen ERD), into their corresponding Data Tables/Relations.
- **LAST DATE OF SUBMISSION:** before 12 mid-night of July 18, 2021.
- **WHERE AND HOW TO SUBMIT:** please upload your Final Output (pdf file) as ITEP204-FTP-<LastName-FirstName-MI>.pdf in our google classroom at the designated Assignment Object.

# *Overview of the Project*

- **OUTPUT REQUIRED:** Submit a PowerPoint Presentation saved as PDF showing the following required outputs:
  - **Form Designs** use PowerPoint in creating your forms. Identify data input elements like text boxes, dropdown boxes, check boxes, option boxes, etc.
  - **Database Schema** using Peter Chen Entity-Relationship Diagram Notation.
  - **Table Designs** use Excel in creating your Table Designs. Please identify the Primary Keys, Foreign Keys, Super Keys, and Indexes. Make sure that the Database Schema has been Normalized up to 3NF before converting the Entities into Tables.
    - Note: **Domain (or Column) Definitions**: i.e., Data Types, Data Lengths, and other Domain Boundary/Definition Rules, are NOT be required for this project.
  - **Report Designs** – not applicable for this project.

# *Covid-19 Contact Tracing App*



→ My Covid-19 Early  
Warning Diary

# *Covid-19 Contact Tracing App Database Design*

→ **Main Task:** Create a Database Design for a Covid-19 Contact Tracing Application that will use both Mobile and Web Enabled Applications. Assume that another team shall design the Mobile and Web Applications that will use the Database that you will be designing. Be sure to provide the following in the PDF PowerPoint Presentation that you will be uploading for submission:

1. Form Designs.
2. Database Schema Normalized into 3NF.
3. Table Designs with Primary Keys, Foreign Keys, Super Keys, and Indexes specified.

# *Covid-19 Contact Tracing App Database Design*

## → **System Description and User Requirements:**

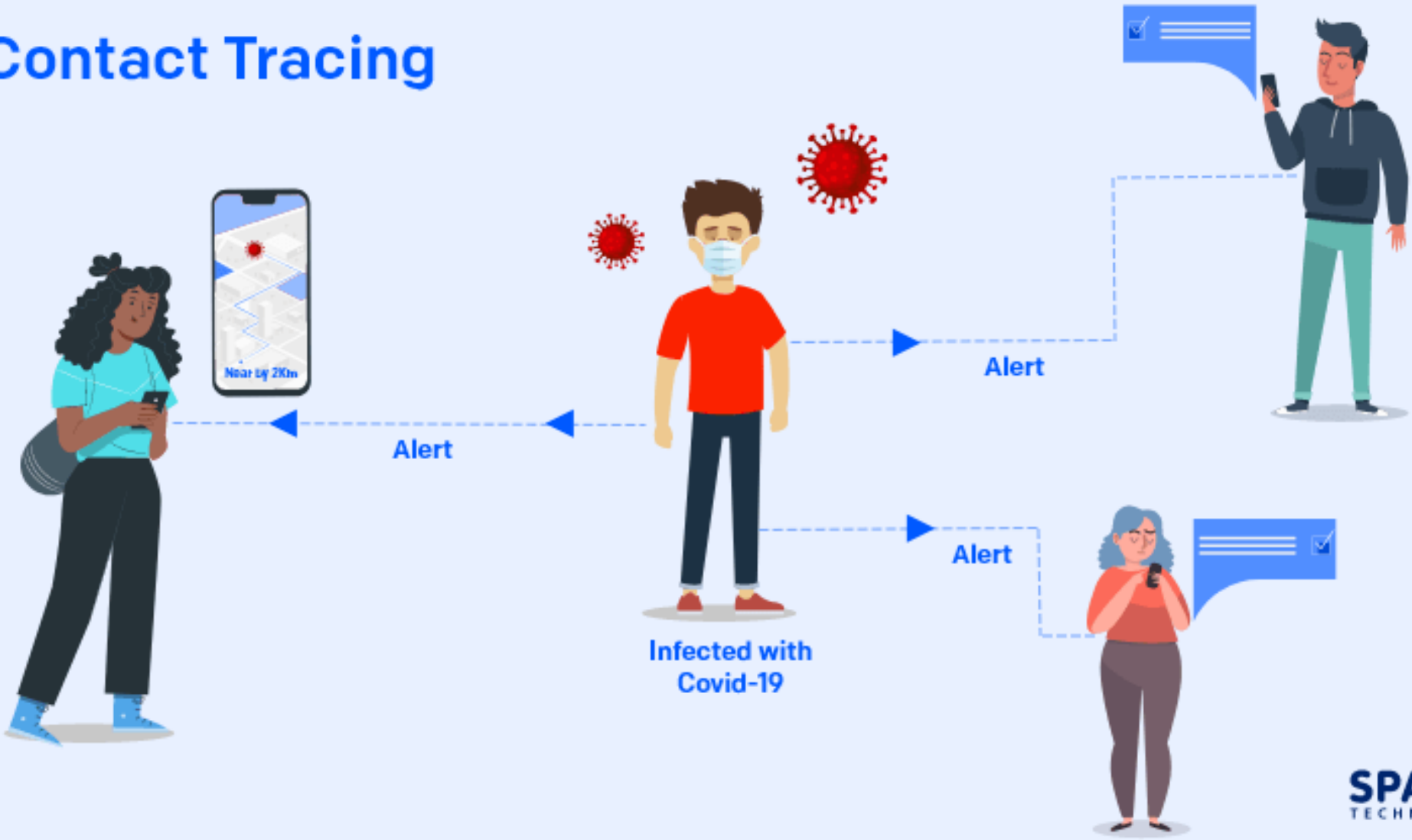
- Create a Daily Activity Diary that will help a person keep track of the locations and activities he/she has done each day during the Covid-19 Pandemic so that when somebody is detected to be infected with the virus, it will help the Healthcare Workers trace the people who may have interacted with the infected person.
- The App should protect personal data privacy by letting users set data access permissions to what data the App can gather, as well as get consent to sensitive data like accessing GPS location of the mobile device of the person.
- The App design should accommodate people with physical or mental disabilities, digitally challenged/illiterate, non-local speakers, or people using old or cheap gadgets.
- The App must be able to notify ALL the persons who were in-contact with a Covid-19 Infected Person. The notification should include the Date (and Location if permitted) of Contact and the instructions on what to do after.

# *Covid-19 Contact Tracing App Database Design*

## → **SYSTEM USERS:**

- People (Citizens or Non-Citizens): With Mobile Device, Without Mobile Device
- Stores and other Indoor Locations where the public may enter
- Public Transportation
- Local Government Health Unit responsible for Contact Tracing
- Hospitals or Clinics in-charge of Covid-19 Testing and Verification
- App Systems Administrator

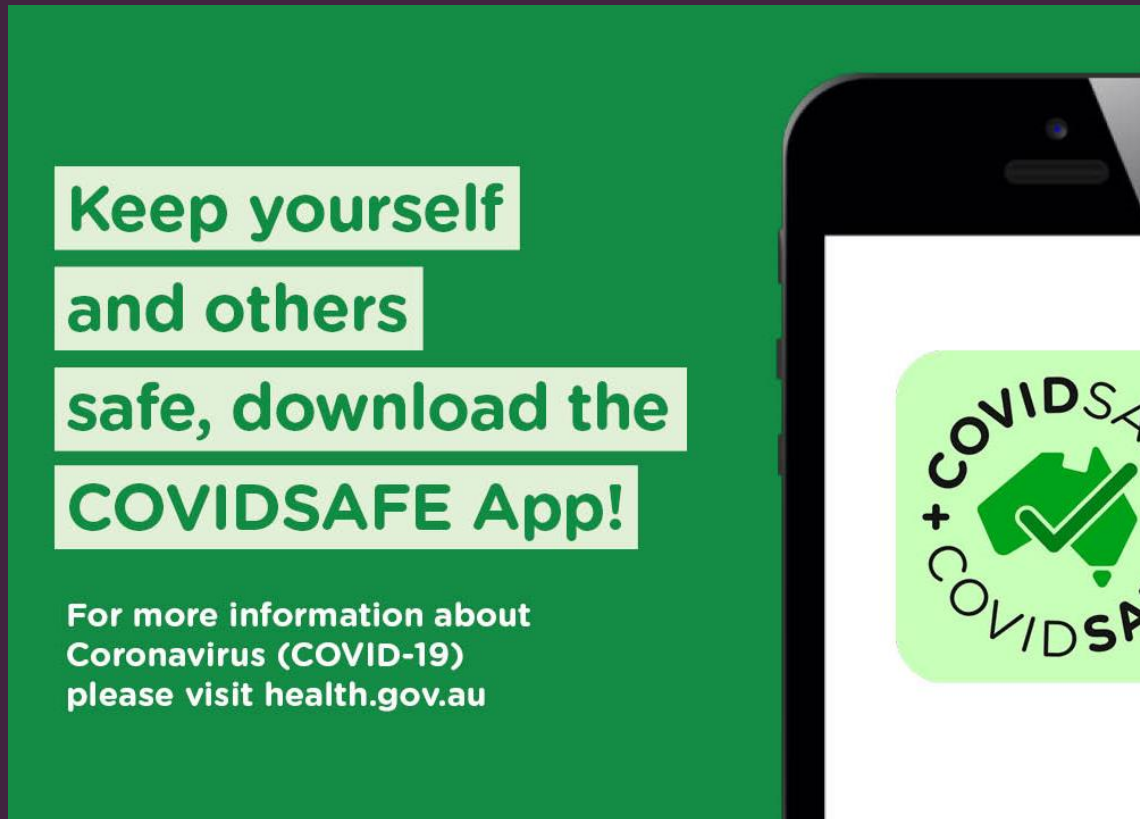
# Best Contact Tracing Apps



# *How Do Contact Tracing Apps Work?*

- The best contact tracing app for iPhone and Android automates the laborious manual process of tracing back people who might have come in contact with an infected person. This is how they work:
- The app uses Bluetooth<sup>®</sup> Low Energy and GPS navigation.
  - Once someone installs the app, it will start logging the distance between the phone and other phones nearby that also have the app installed.
  - The app stores the log of GPS location data and other people that have come in contact with each other. This log is anonymous to maintain privacy.
  - If someone tests positive or has symptoms of COVID-19, they need to inform it in the app.
  - This will trigger an anonymous alert to those other app users with whom this person came into significant contact over the previous few days.

# Application Features



- Logs in location details using GPS technology
- Input test results if your test is positive
- Get alerts if you have come in contact with a COVID positive person
- Share the information according to you
- Design References:
  - <https://www.covidsafe.gov.au>
  - <https://www.spaceotechnologies.com/best-contact-tracing-apps>



# *End of Presentation*

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