CovidDectector System

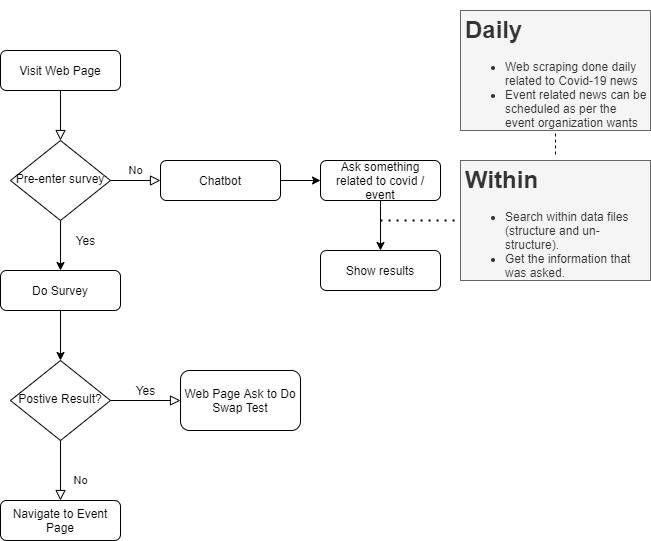
**Abstract:** With the recent low number of community cases of covid-19, mass gathering is allowed. However, participants will have to take an antigen rapid test for Covid-19 and obtain a negative result before admission. Hence, event planner must ensure the participants safety/health condition before allowing participants to enter the event venue. This project proposes solution to this problem by using a machine learning model to determine the likelihood of participant having Covid-19. In addition, it includes a chatbot to allow the participants to know current information about Covid-19 and the event itself.

1. **Business Case**

This current law enforced mainly target huge events. Before a participant can enter the venue, the event organizer has to ensure that he/she is not contacted with Covid-19. In order to implement this, the event organizer will have to check with each participant individually on their health status before letting them in. As social distancing enforcement is a must, a long queue will be expected. Meaning, more manpower is needed to maintain the queue. If a shorter time can be implemented to handle these, the queue will be shorted thus lesser manpower is needed.

We propose that this can be handled with a web application (mobile-friendly) that has a survey for the participants to answer in order to get their health status. Participants with a mobile device would be able to answer the necessary questions before reaching to the front of the queue. The result of the survey will let the queue maintainer to either guide the participant to the swap test area or letting the participant in to the venue. Moreover, it also includes a chatbot which allows the user to know (real-time) information about Covid-19 and the event itself. This may keep the participants occupied while waiting for their turn to enter the venue. The solution may be tailored to suit to different type of events.

1. **System Model**

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1. **System Development & Implementation**
2. **User Interface (UI)** 
   1. Web application

Web application uses Django Web Framework for these functions:

* + 1. UI for user check event information and answer the survey question before entering the venue.   
       This UI is form based, requiring information for decision tree to predict the result.
    2. User may navigate to the event tab to get event information (e.g queue waiting time etc).
    3. User may navigation to the chatbot tab to ask question with regards to the event or covid-19 that is not stated in the website.

1. **Chatbot (Backend)**
   1. Chatterbot library :
2. **Web scrape (Backend)**
   1. Beautiful Soup Python library:
      1. Visit the websites that would be used to get Covid-19 news and view their html
      2. Using the html parser to retrieve the entire html of the website we are scraping.  
         Extract relevant information from the html and write to the data file.  
         Extract relevant urls and visit those websites to get relevant information.