Contact Tracing and Privacy Module 2: Exposure Notification System

Last time we learned that by collecting more information, a system can often provide more capabilities. On the other hand, by having access to sensitive data, a service provider can potentially infer additional knowledge, including private information. We also learned about the importance of protecting privacy.

For this activity, we are examining the privacy implications of an exposure notification approach for contact tracing.

1. Suppose the following data is currently stored on two devices X and Y.

| Data stored on device X (**key = K1**) | Data stored on device Y (**key = K2**) |
| --- | --- |
| | **Key** | **Time** | | --- | --- | | K3 | t3 | | K4 | t2 | | K2 | t6 | | K5 | t8 | | | **Key** | **Time** | | --- | --- | | K1 | t6 | | K6 | t3 | | K7 | t9 | |

Recall that a contact tracing diagram is a graph where each node represents an individual and each edge represents a contact. Draw the contact tracing diagram for this data set. Use the keys above to represent the individuals.

1. If Person X is a confirmed case, list all the people that must be contacted.
2. Do you believe there were any gatherings?
3. What, if anything, can you tell about the people who appear in these datasets?
4. What are some limitations of this system? Can it be used to identify infected areas? For Prioritizing individuals to receive the vaccine? For Research purposes?
5. How do you evaluate this system in terms of protecting privacy and fulfilling the purpose of contact tracing?