Week_3_df
Using Google Scholar, search for a recent article about software engineering cases or case study that involves **software security and privacy**.

In your discussion:

1. Provide a summary of the case.

The rise of IoT in smart cities comes with the security risks caused by cyberattacks. There is a need to find a better way to secure the entire system without any compromises. The authors suggested that blockchain can be a main part of such a solution. They discussed how blockchain features (transparency, democracy, decentralization and security) helps to achieve that requirement. In addition they suggest a solution of voting model using smart contracts of Ethereum blockchain.

IoT collects data from its/urban environment, infrastructures, events and even people. For example, you were working until late, your fridge sent you a notification that it had a lack of milk or bread, you sent back a message by asking it to make an order. e-Store got an order, robots packaged the order and a drone sent a package to your home.

IBM implemented similar technology in security banking systems. They mentioned the problem of storing data in a centralized manner and can be manipulated. Blockchain does not change data, data is immutable. Such an application called DApp, built a voting system and counted the number of votes counted properly.

2. Explain how the author/s applied the SDLC to software security and privacy.

They looked at ready products and algorithms. Gathered and analyzed requirements. Defined steps on how to develop a smart city. Designed the architecture, which contains 4 layers: sensing, data collection, data processing and application layer. Then defined services, concerns of responsibilities. A blockchain they used based on PoW - proof of work. They explained: “When the admin starts the election, voters can cast their vote transactions, smart contracts do the number of votes counting according to the transactions that are stored on the blockchain. When the admin ends the election no one can cast a vote.”

3. Share new software engineering concepts that you learned from the article or case study that are relevant to software security and privacy.

I’ve learned a concept of smart contracts which can help to secure data privacy. Zero trust is the way to go. They mentioned that we should design smart contracts to be as small as possible for attack vectors. Also to use the principle of least privileges. Next, follow secure coding guideline(s). Plan for the worst. And monitor smart contract operations.

References:

1. Emre Erturk - A Case Study in Open Source Software Security and Privacy: Android Adware
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2. Fatima Zahrae & Co (April, 2023) - Security and privacy in smart city
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