COMP64529

Software Architecture for Blockchain Applications

Tutorial 11

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Question 1. (4 Marks Total)
Describe the disadvantages/risks of using oracle pattern.

Question 2. (4 Marks Total)
Compare and contrast PoW vs PoS

Question 3. (4 Marks Total)
Under what scenario that public blockchain is better than private blockchain?

Question 4. (10 Marks Total)
Imagine that you were to develop a blockchain-based online gambling/betting platform, that is dealing with events such as sport events, competition and anything that can be bet upon.

a) Please draw a diagram that clearly indicates which modules/function should be placed on chain and which should be off-chain. In your diagram, please at least include 4 modules required for the platform and legend that explain each component in the diagram **MUST** be included.

b) As a betting platform is dealing with real events (eg. winner of sport events), external data is required for the closure of each betting session. One of challenge is that all operations on the Blockchain should be deterministic, hence confirming external event via API call is not possible. Describe one design or development approach that might help to address the challenge.

c) Please discuss the trade-offs of implementing the previous design or approach and suggest a potential solution that could mitigate or solve the problem.