Pattern

ADV:

1.Speed up the development process by providing tested, proven development paradigms

2.Effective software design requires considering issues that may not become visible until later in the implementation

3.Better code readability

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

Centralized Oracle:

ADV:

Connectivity: Closed environment of block chain is connected with external world through Oracle

DisADV:

Trust: Oracle is trusted by all the participants

Validity: External states injected into the transaction cannot be fully validated by miners

Long-term availability and validity: External state used to validate transaction changes after the transaction was originally appended to the blockchain

Decentralized Oracle:

ADV:

Reliability: Risk is reduced from a single point of failure; Improve the likelihood of getting accurate external data

DisADV:

Trust: All the oracles that verify the external state are trusted by all participants involved in transactions

Time: Get required information from multiple data sources and reach a consensus for the final results

Cost: Increase with the number of oracles being used

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

**-----Consensus Algorithm**

poW: proof-of-work

: Most common used in bitcoin and ether; DDoS attacks are impossible in this alogorithm;

High energy cost; Increase centralization of mining operations; low transaction throughput

poS: proof-of-stack

: providing a more scalable blockchain with higher transaction throughput; Less security

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

Public blockchain: Equality-treated, protecting anonymity users

Private blockchian: Confidentiality, availability, accessibility,