

Start here.

a) i) An ~~RFID~~ RFID tag is a small device used to uniquely identify an item or object. They emit radio frequencies which can be detected using an RFID reader.

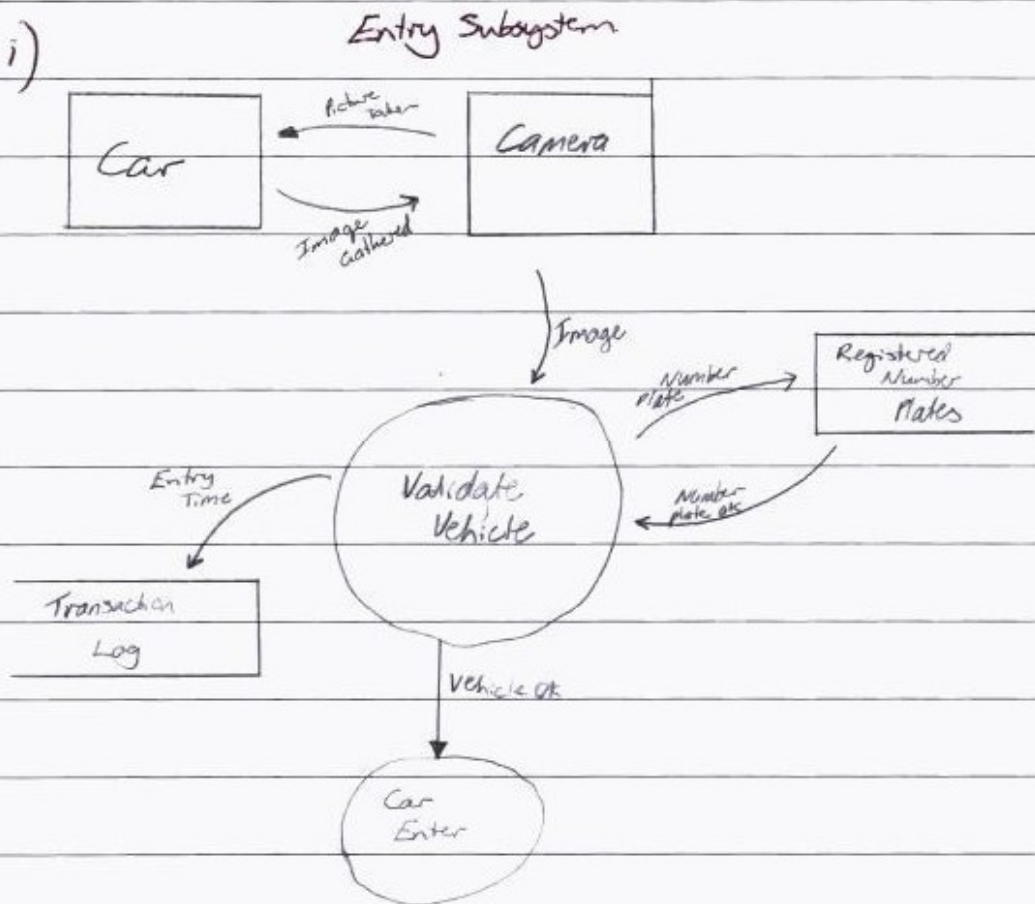
ii) Transaction logs provide historical data of transactions. This becomes useful when a system or transaction fails and needs to be rolled back to a stable state.

b) i) Library loan systems require real-time processing to ensure the customer doesn't have outstanding loans or fees. The use of real-time processing also increases data accuracy to ensure the system is aware that a book is no longer in the store.

ii) Batch processing could be ideal for situations where large amounts of transactions need to be processed at once. This can then be performed at a time when the system isn't in high demand increasing efficiency. This can be seen in situations such as bill generation and cheque

clearance.

c) i)



ii) The parking system ~~collects~~ initially collects image data from the vehicle. This is analysed by the system and validated as to whether or not it is authorised. The number plate is compared to the stored number plates and retrieves a validation. The system stores in the transaction log, the entry and exit times of each vehicle. This ~~is~~ retrieved along with the appropriate

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account holders information is retrieved by the system to process the transaction. Upon exit the same collection of data via image is performed.

- iii) This system could in future be implemented in public car parks such as shopping centres. The users could register their vehicles and accounts with the system and proceed to make an automatic payment upon exit. This would increase efficiency and could be developed to promote cost efficiency.

With this automation of systems, the need for a toll booth operator is no longer present. Despite this, the need for more technical expertise is required to design, implement and maintain this system.

\* Security issues may arise with the storage of peoples bank details. Also, the recognition of number plates could lead to number plate theft in order to pay a smaller fee.

