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MODULE: Bachelors {Software Engineering}

SUBJECT: Software Engineering

SEMESTER: 4

SECTION: B

INSTRUCTOR: Engr. Ghassan Husnain

SESSIONAL ASSIGNMENT

1: Video-Rental LTD case study

Video-Rental LTD is a small video rental store. The store lends videos to customers for a fee, and purchases its videos from a local supplier.

A customer wishing to borrow a video provides the empty box of the video they desire, their membership card, and payment – payment is always with the credit card used to open the customer account. The customer then returns the video to the store after watching it.

If a loaned video is overdue by a day the customer's credit card is charged, and a reminder letter is sent to them. Each day after that a further card is made, and each week a reminder letter is sent. This continues until either the customer returns the video, or the charges are equal to the cost of replacing the video.

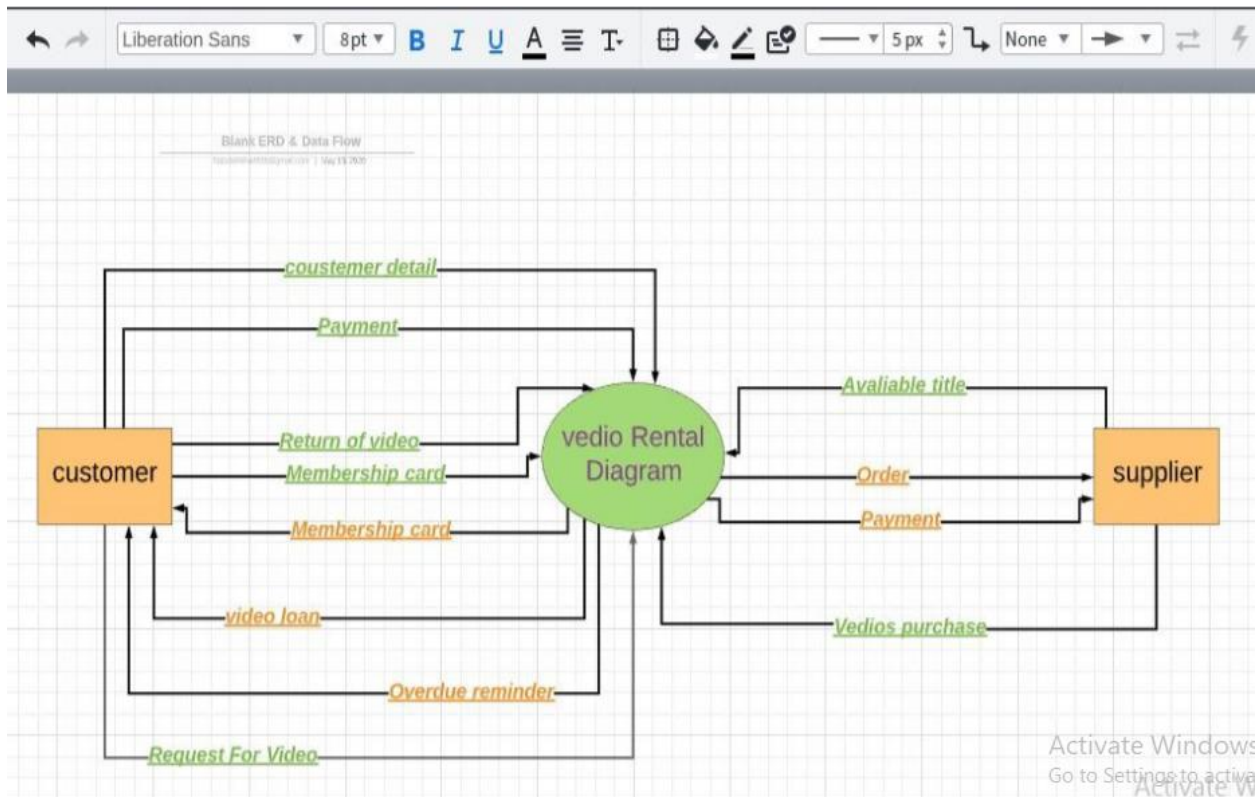
New customers fill out a form with their personal details and credit card details, and the counter staff give the new customer a membership card. Each new customer's form is added to the customer file.

The local video supplier sends a list of available titles to Video-Rental LTD, who decide whether to send them an order and payment. If an order is sent, then the supplier sends the requested videos to the store. For each new video a new stock form is completed and placed in the stock file.

Q.1: Draw a Context diagram for Video-Rental LTD?

ANSWER:

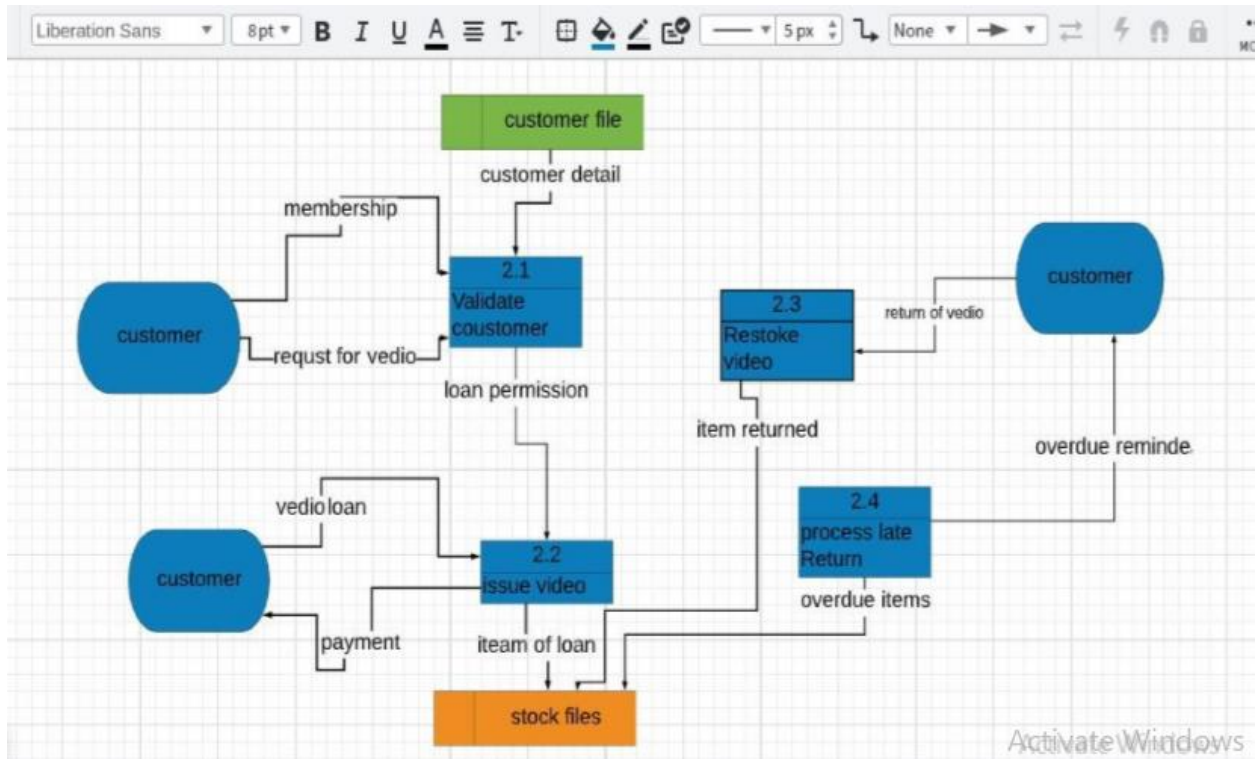
Context diagram for Video-Rental LTD:



Q.2: Draw a Level 1 Data Flow Diagram (DFD) for the above case study?

ANSWER:

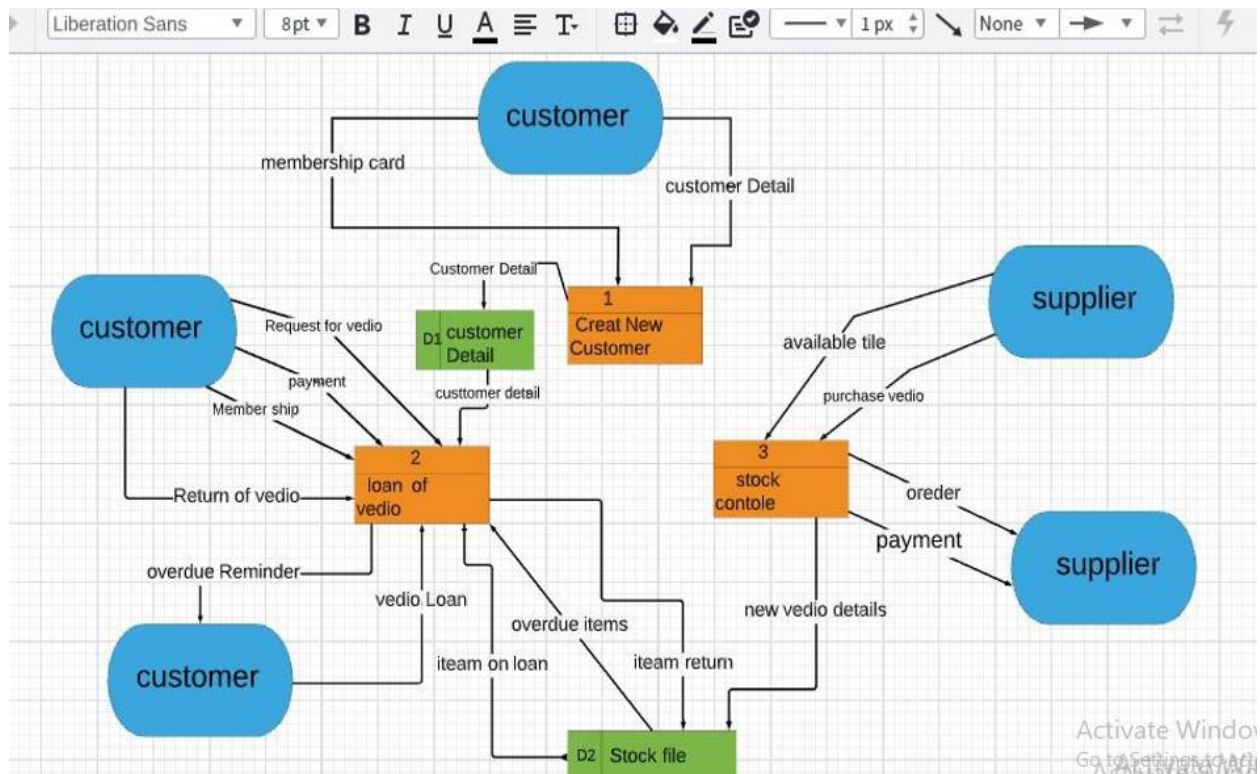
Level 1 Data Flow Diagram (DFD):



Q.3: Draw a Level 2 DFD for Video-Rental LTD case study stated above?

ANSWER:

Level 2 DFD for Video-Rental LTD:



2: Estate Agency case study

Clients wishing to put their property on the market visit the estate agent, who will take details of their house, flat or bungalow and enter them on a card which is filed according to the area, price range and type of property.

Potential buyers complete a similar type of card which is filed by buyer name in an A4 binder.

Weekly, the estate agent matches the potential buyer's requirements with the available properties and sends them the details of selected properties.

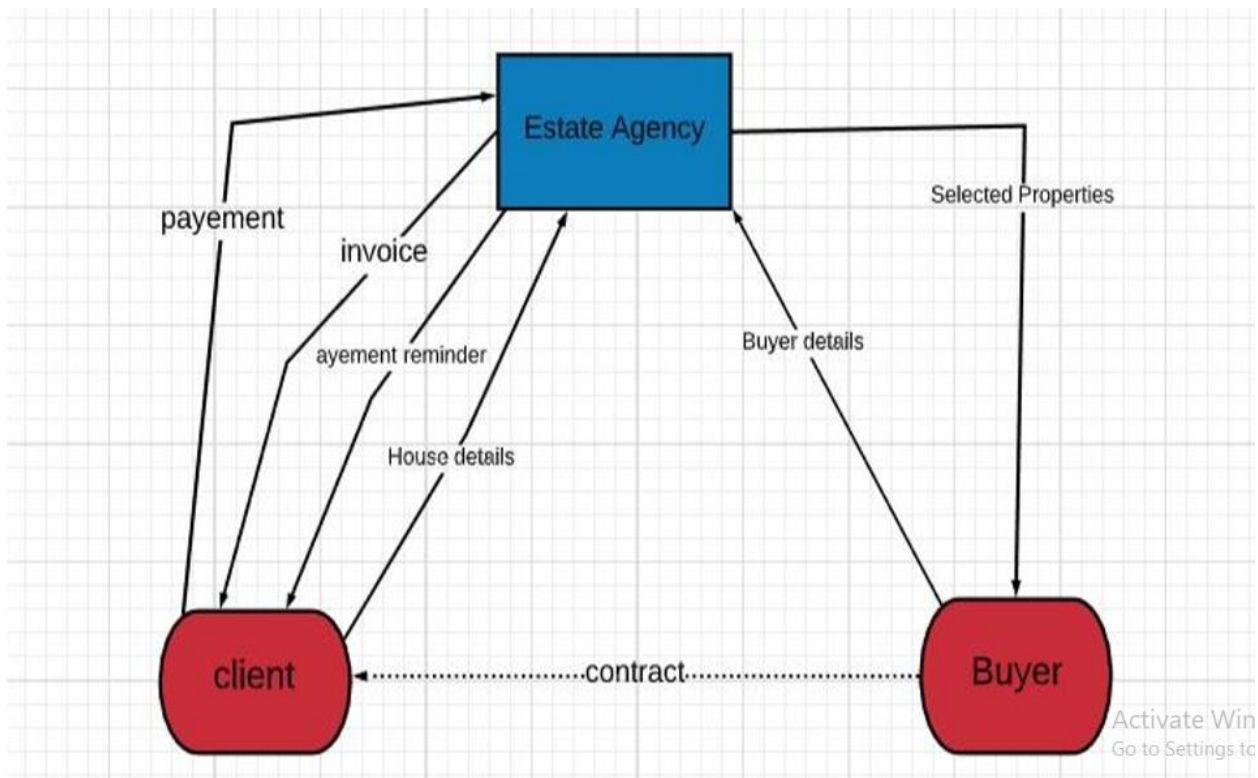
When a sale is completed, the buyer confirms that the contracts have been exchanged, client details are removed from the property file, and an invoice is sent to the client. The client receives the top copy of a three-part set, with the other two copies being filed.

On receipt of the payment the invoice copies are stamped and archived. Invoices are checked on a monthly basis and for those accounts not settled within two months a reminder (the third copy of the invoice) is sent to the client.

Q: Create a Level 1 and Level 2 DFDs for this Estate Agency case study?

ANSWER:

Level 1 and Level 2 DFDs:



3: Based on your experience with a bank ATM, draw an activity diagram that models the data processing involved when a customer withdraws cash from the machine.

ANSWER:

Activity diagram:

