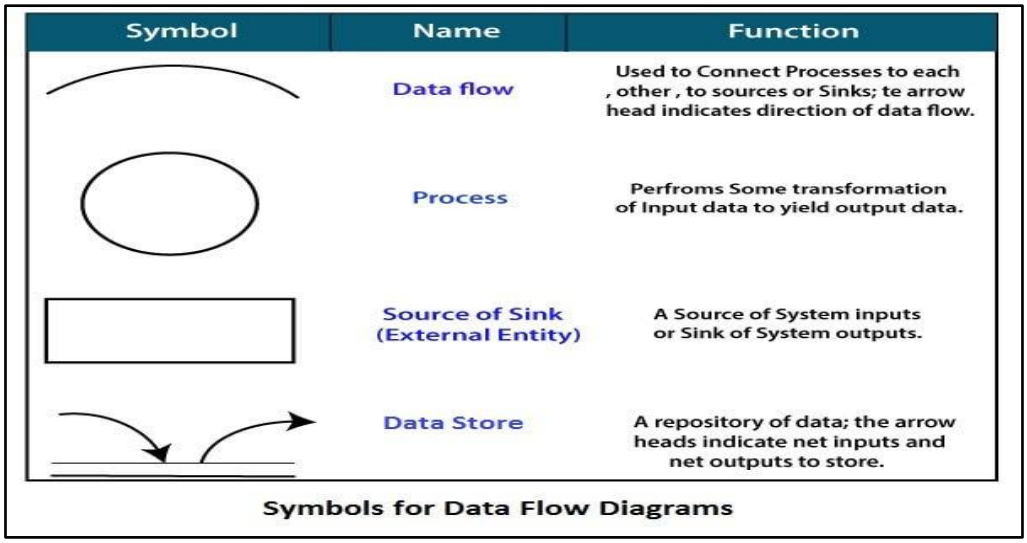
Experiment No: 04

- **Aim: Structured data flow analysis.**

- **Theory:**

- **Project Name: - The QR CODE SCANNER**

A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It can be manual, automated, or a combination of both.



Symbols for Data Flow Diagrams

Circle: A circle (bubble) shows a process that transforms data inputs into data outputs.

Data Flow: A curved line shows the flow of data into or out of a process or data store

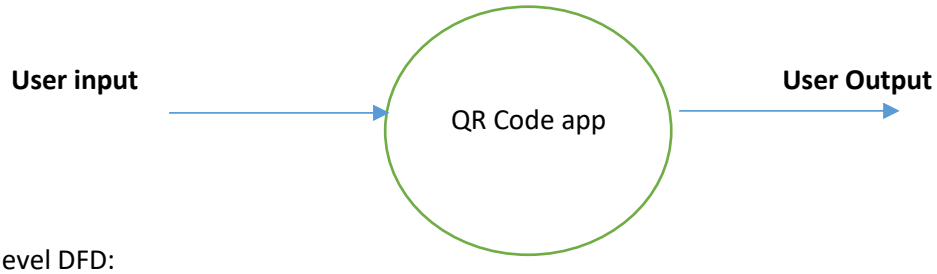
Data Store: A set of parallel lines shows a place for the collection of data items. A data store indicates that the data is stored which can be used at a later stage or by the other processes in a different order. The data store can have an element or group of elements.

Source or Sink: Source or Sink is an external entity and acts as a source of system inputs or sink of system outputs.

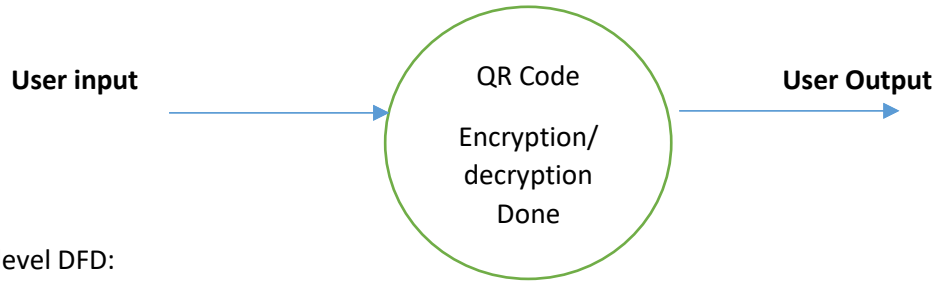
Levels in Data Flow Diagrams (DFD):

- 0-level DFD,
- 1-level DFD,
- 2-level DFD

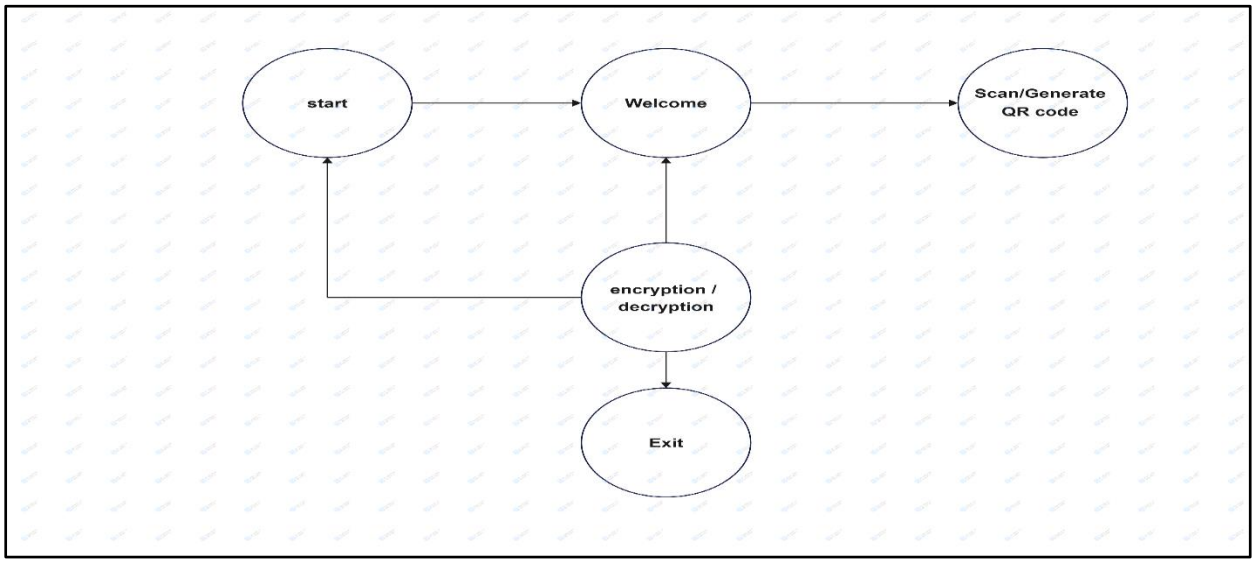
0-level DFD:



1-level DFD:



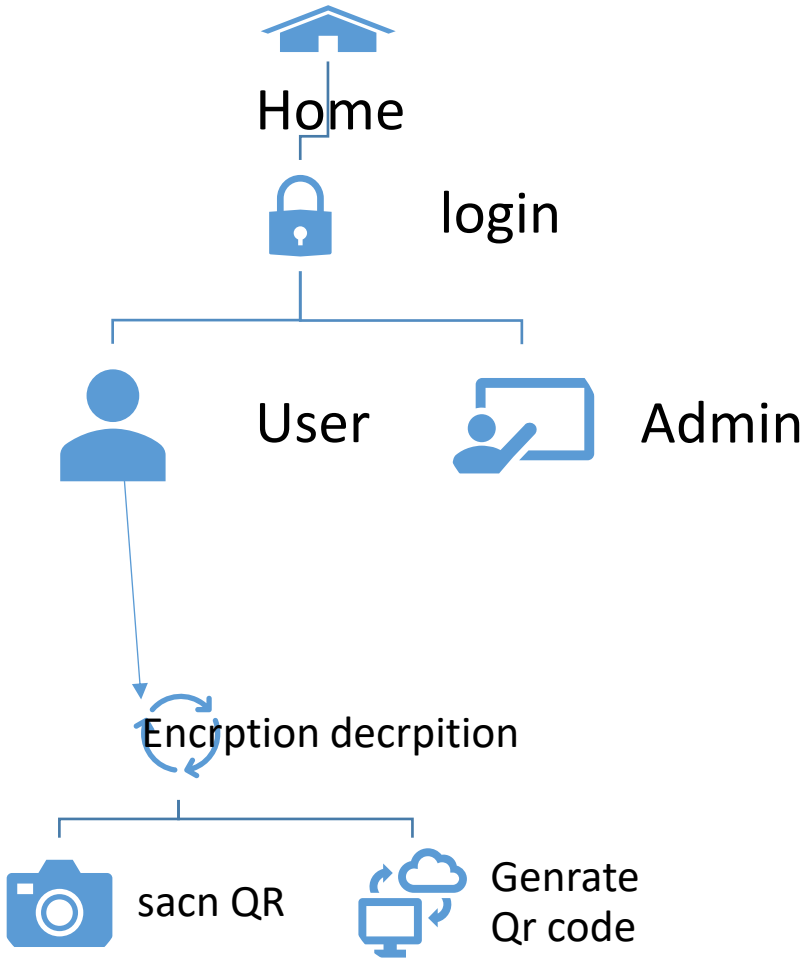
2-level DFD:



DFD

Decision Trees

Decision trees are a method for defining complex relationships by describing decisions and avoiding the problems in communication. A decision tree is a diagram that shows alternative actions and conditions within horizontal tree framework. Thus, it depicts which conditions to consider first, second, and so on. Decision trees depict the relationship of each condition and their permissible actions. A square node indicates an action and a circle indicates a condition. It forces analysts to consider the sequence of decisions and identifies the actual decision that must be made.



Data Dictionary -

A data dictionary is a structured repository of data elements in the system. It stores the descriptions of all DFD data elements that is, details and definitions of data flows, data stores, and data stored in data stores, and the processes. A data dictionary improves the communication between the analyst and the user. It plays an important role in building a database.

Filed-name	Data-type	Filed-size	Description	Example
Email id	text	20	It have unique email-id	Collegeinfopk02@gmail.com
Password	Number	10	It have unique Password	Pass@1234
username	text	10	It have username	Priyush02
Mobile No.	Number	10	It have unique mobile No	9511689394

Pseudo-code:

```
1 BEGIN:

#TAKE THE LOGIN AUTHICATICATION

IF (AUTHICATICATION== TRUE){

PRINT (“LOGIN SUCCESSFUL”);

} ELSE {

PRINT (“LOGIN UNSUCCESSFUL”)
}

#TAKE THE USER SCAN

IF (SCAN== ENCRPTION/ DESCRIPTION ){

PRINT (“SCAN  ”);

} ELSE {

PRINT (“NOT SCAN  ”)

RETURN LOGIN;
}

#TAKE THE USER GENERATE

IF (SCAN== ENCRPTION/ DESCRIPTION ){

PRINT (“SCAN GENERATE   ”);

} ELSE {

PRINT (“NOT SCAN  GENERATE ”)
```

RETURN LOGIN;
}

EXIT:

Pseudo-code:

1. Start application
2. Welcome screen occurs
3. Use the information
4. Scan/Generating QR code.
5. Exit app.

Advantages of **DFD**

- It helps us to understand the functioning and the limits of a system.
- It is a graphical representation which is very easy to understand as it helps visualize contents.
- Data Flow Diagram represent detailed and well explained diagram of system components.
- It is used as the part of system documentation file.

Disadvantages of DFD

- At times DFD can confuse the programmers regarding the system.
- Data Flow Diagram takes long time to be generated, and many times due to this reasons analyst are denied permission to work on it.

● Conclusion: -

We successfully Understanding **Structured data flow analysis.**