**DBMS Vs File system in our project**

* **Data redundancy**

In our project we are having some information related to one user, and to represent that if we use file system we might not have facility to store them properly and data may be stored redundantly.

Examples:

🡪Our platform is based on requirement of people related to agriculture and we are making record to show user’s requirement on platform and certain requirements may not change with time and if we use file system there than there will be several DR issues compare to DBMS.

🡪In our project there is a department of transportation and while showing live location of transportation vehicle there might be possibility that vehicle may not be driven to other place due to some of reason and in that case live location will not be change for specific time and it may cause DR problem. And so we can’t use file system here.

🡪In our project we are storing info of farmer’s previous season’s crop and there are some types of farming which can be happened all the seasons and in that case previous season’s crop value will be repeated and that may generate DR.

🡪On our platform we are storing information of some of users whose past data we are storing but that might be possibility that it will not change with time and will be repeated. For example, we farmer may not have leased land for many years and so that field will have same value for long time and it will create DR.

* **Data inconsistency**

Examples:

🡪If registered organization or shop has been sold by registered owner than all the related information of shops and owner must be changed and if we store such information in file system than there will be difficulties and we may need to make another files to represent new data but while in DBMS data edition will be easier and it will be easy to handle data inconsistency.

🡪If any user leaves platform than we have to remove all the data related to that user from platform and if that data is stored in different files, it may create problem to remove that data because it is scattered but if we handle that data using DBMS than adding or removing data will be easier and DI will be handled.

🡪We are registering address and contact number of a user and using them at some specific places but if user changes them than we must have to change them from everywhere they exist else there will be data inconsistency and to handle this DBMS is easier to use compare to file system.

🡪On our platform we are registering workers of small transportation company and if owner sells his one of vehicle or worker stops working than information related to them must be changed else there will be data inconsistency and it is possible to handle easily in DBMS.

* **Atomicity:**

Examples:

🡪In our application if transportation provider has taken an order so after order is taken than availability status of vehicle should be changed.

🡪Fertilizer merchant will show available stock of fertilizer but if he gets an order and if order is accepted than at that point of time stock updates should be changed.

🡪On our application, crop buyer will add his required crops for buying but until he updates that list and buys crop of interest than certain changes in required crop record should be done.

🡪Once deal between two parties has been done than deal details should be added in deal record.

* **Difficulty in accessing data:**

Examples:

🡪On our application there are some sensitive information related to user’s business and it must be accessed to user only and to do so we must set some criteria by adding some constraints and if we follow file system than we have to do different coding for different kind of data access and hence DBMS is useful in such condition.

🡪As our project is related to agricultural business so if government want to analyse specific data related to agribusiness than they have to access or retrieve some data and it is easier to do with DBMS than file system.

🡪If any farmer wants to search about in what price crop buyers want to buy crop than he will have organised results for his search if database for that subject is created using DBMS as data access will be easier.

🡪If users on application want to know live location of transportation provider than that real time data can be accessed easily than File system.

* **Security issue**

🡪We are having deal record between two parties and if any cheating occurs than it can be inspected from record but because of real time addition in record it is quite difficult to do with file system than DBMS.

🡪On our platform we are asking information from user and in that there are some points to be shown on platform and some of are not to be shown on platform due to security purpose and to do so file system can’t provide access or constraints and it is easy to do so with DBMS.

🡪We are not allowing any random person to register on platform without specific information and it is possible by adding some conditions or qualification criteria to register and it will be very complicated with file system as there we will need to write several codes but it can be done using DBMS.

🡪As all the data of users and their actions is on server, if data gets deleted somehow than it can be restored using back up facility but in case of file system it is difficult.

* **Integrity issues**

Examples:

🡪On platform, we are making record for deal happened between two parties and there are no restriction on number of deals to do in a day for a user and to handle such a condition file system is not reliable and DBMS can provide such feature.

🡪In our database, there are some parameters like contact number, time and date, and rating of service which should contain specific type and range and to do so DBMS is feasible solution.

🡪On our virtual platform we are seeking information like Adhaar card number from user and Adhaar card number is of 12 digits, if user does any mistake while entering it system must stop it and it can be done in DBMS by adding constraints.

🡪For farmer on our platform, we are asking him about he has leased land or not and answer should be in ‘Y’ or ‘N’ and similar example for transportation driver about his availability at current time and he must add this detail with ‘Y’ and ‘N’ and not in another form so this kind of situations are easier to handle in DBMS than file system.

* **Data abstraction**

Examples:

🡪To register on our platform, we are asking information form farmer about contact number, address, current crop in his farm but apart from that for analysis purpose and to predict some schemes for them we are asking some information about Loan and area of leased land and so we must hide such information and we should show his abstract information form on platform and which is possible by creating back end system by DBMS.

🡪We are asking yearly income of users to analyse average income of users and to compare current income with past’s income and this should not be visible to other users apart from details of visible business information of users and even in this case data abstraction helps to hide some information using DBMS.

🡪There will be details needed to check proof of approval from government for “soil analysis lab” and “fertilizer factories” and such information should not be visible to others apart from organization’s visible business information. And this is the concept of data abstraction.

🡪Transportation provider will have to give some information like RC number of vehicles, vehicle number, vehicle types but in that data set RC number should not be shown on platform but to show other information data abstraction will be used by DBMS.

* **Concurrent access to data:**

# on our virtual system, there are some processes which will be done parallel and if we use file system to do so then concurrent access will not be good option and so we will use DBMS for them and examples are given below.

🡪If farmer and crop buyer does a deal and they have to add their deal details in farmer-crop buyer business record but there is possibility that more than one pair will do deal and update record at the same time.

🡪Similar example is of fertilizer dealer and farmer that even they will have business deal records and multiple deals between different pairs may occur and they simultaneously add their deal entry.

🡪 Transportation provider will take orders for transportation and accordingly availability of transportation provider should be changed and there will be possibility that at same time he might get more than 1 order so data must be handled in such case.

🡪Fertilizer merchant will get order for fertilizer and if he gets more than 1 order at a time than there should be some criteria whom to deliver first and availability stock of fertilizer must be changed accordingly. So in such case of simultaneous access, DBMS is feasible solution.

* **Isolation of data:**

Examples:

🡪There might be possibility that if application adds new kind of user type with allocated features for them then there is possibility that new features are added by new logical language and as platform is about connecting different kind of users than platform must show compatibility with new technology and so application’s database should be made using DBMS else there will be data isolation.

🡪As our project is about application for agribusiness, so there are high chances that with time passing we need to add some features and if we use file system to create database and if in past we used specific language to add features and now we want to add another feature using another language than there might be possibility that we can’t connect certain data of past in file system with new language and it can create data isolation problem.

🡪If we add new features for farmers by seeking some information of them by using new language than the language used for existing data than there should be compatibility between new and old data and as DBMS is compatible with different languages it can be done and data isolation will be avoided.

🡪In our project, if we want to add voice feature for transportation customer for giving information about vehicle location and to do so we have to make additional data set required for voice feature by connecting location data base that might be added using different language than language is used for voice feature but still we have to have compatibility and it is possible using DBMS only and there will not be data isolation.