

IFD & Task Decomposition & Abstract Code

1. User Role / User Login / Membership Registration: Should these appear in the IFD?
No, not required in the specs.
2. OnSale Price: Do we need to create a form to input the real-time price for each day?
Based on my understanding, no need.
3. Whether splitting the "Top 50 Employers" and "Top 50 Employers Drill-down" into two different tasks rather than combined them as a whole "Top 50 Employers and Drill-down"? Is there any specific requirements on splitting tasks in IFD? **See below.**

[Piazza @ Note 193](#) TA said “We probably more often have general query and drill down as subtasks of one task. It is important however to be consistent with respect to data flows as drill down will often require additional data flow from screen to task and this flow direction should be reflected no matter how you treat the tasks and subtasks.”

Extended Q&A for subtasks:

- Although splitting in IFD, can we add drill-down task as a subtask for task decomposition? **Yes, More commonly we treat general report and drill-down as subtasks of one task rather than separate tasks.**

[Piazza @ Note 164](#) TA said

“this is why we can assume that while we are running queries and between query and drill down basically nothing changes. At the same time we do not want to get prefetched drill down data and if there is some change between general query and drill-down that would not be a big problem as well. There will be a big problem if pre-fetched data overwhelms memory and capacity of the dbms to query, that’s why prefetched drilldowns is not a good idea.”

4. How detailed does the IFD need to be? **See below.**

[Piazza @ note 215](#) TA said

“ This is completely up to your team to decide how granular should be the tasks.

The best way would be to look at gtonline sample project and thus get some idea of what level of granularity we need.

Also keep in mind that we put in IFD only those tasks which are accompanied by the flow of data which at certain point of its lifecycle reside in the database. If some operation in our application is not associated with flow of such data then we do not need to reflect it in IFD.

We also do not want to split into separate tasks those data flows which would eventually be performed in a single query. And we will in general require that your application should minimize number of queries and wherever possible retrieve all data required by the specs for a particular task in minimum number of queries.

please, mind that IFD should correspond only to functionality which is explicitly required in the specs. Only those functions which are mentioned in the specs should be part of our application, therefore each task should be performing one of the operations required in the specs and data flows only for those operations are required to be seen in IFD diagram.

we create EER thinking about the data we will need to store and track.

we create IFD thinking about what specific operations and functions should our application perform. “

@Piazza Post 272 in the follow up section.



Aditya Patel 3 hours ago

I know the grading weightage on the AC is high, how detailed must it be? Its not pseudocode right its much less detailed than pseudocode right?



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Alex Yanovsky 3 hours ago

It should be as detailed as you can make it.

I saw many deductions when folks write just superficial AC. Don't recall deductions for being too detailed.

1. Zipcode: Should the zipcode be modeled under Store or under City? or can we omit zipcode from the EER altogether? **Zip code should be modeled under store since spec mentioned but not in City table.**

2. N-ary relationship:

- Should Product/Transaction/Membership/Store be modeled as a single n-ary relationship? **Updated on 09/27: There is n-ary relationship between Calendar (i.e. SaleDate) / Product / Store. DO NOT add member into the relationship because specs only mentioned “PSCDW stores information about which products are sold, including the store where it is sold, the date of the sale, and the quantity of the product purchased.”**

Piazza @ Note 223 TA said “Does specs say that store sells product to a member? if it does not , then we should not assume it.

we should just exactly follow the requirements explicitly mentioned in the specs and should not add any of our assumptions. And we should reflect in our EER only those properties and relationships which are necessary for ensuring that our application can satisfy the requirements.”

- Can we draw a direct binary relationship between Product and Store even though there is already an n-ary relationship that includes both? If that’s not recommended. should we keep only the n-ary relationship? **Yes, binary relationship and ternary relationship can exist on the pairwise entity types at same time.**

Piazza @Note 152

3. Foreign keys: Do we need to explicitly show foreign keys in the model? **No foreign keys this definition in EER diagram.**

Extended Q&A for Foreign Keys:

1. Should signup_store be showed as an attribute of Member table? **No, because we already created the relationship between store and member. That is saying, a member MUST register or enroll at one store. This implies there is a signup_store for this member.**
2. Should sold_store be showed as an attribute of Transaction table? **No, Transaction can get store_id as part of the primary key through n-ary relationship. Updated on 09/27, transaction is not a table, but a relationship.**

4. Membership.memberName: Should the Membership entity include a memberName attribute? **No, because not mentioned in spec.**
5. ManufacturerName uniqueness: Is ManufacturerName the unique identifier for Manufacturer? **No, because spec only mentioned ManufacturerID as the unique identifier.**

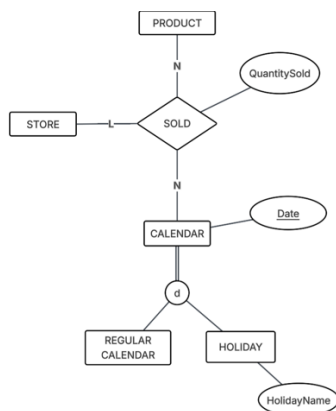
Piazza@Note175 TA said “You should use your sense not of the real world but of the mini-world presented in the specs to determine which are unique identifiers.”

6. Product–Manufacturer cardinality: Is each Product produced by exactly one Manufacturer? **Yes, according to spec “Each product is related to a single manufacturer.”**
7. Holiday modeling: How should holidays be modeled—only a single holidayDate, a calendar table with holiday flags, or a holidayStartDate/holidayEndDate interval? should we store both startDate and endDate? **Recorded video 9/10 30:43 gives an example of student records database. Build a holiday table with specific holiday date and name. Thinking about a fact table contains all the holiday information.**

Extended Q&A for Holiday Table:

- Really, how to connect Holiday?
 - Holiday is an entity doesn’t join in any relationship.
 - Holiday should exist in EER diagram in order to present it in database.

Answer: Holiday is a subclass or superclass of another entity.



Piazza @ Note 220 TA said

“we could not store in our schema anything which does not appear on our EER. our schema must be produced by mapping of the EER diagram.”

The EER diagram should therefore have all objects which will be present in the database.

the diagram can not have any islands , there could be entities which do not participate in any relationships but there could not be any entities which are disconnected from the diagram, from any point of the diagram we can get to any other point through diagram connection. “

[Piazza @ Note 183](#) TA said

“our company sells products on all dates.
some of these dates also happen to be holidays.
so the application should maintain the list of holidays and allow to users to specify which date is a holiday and which kind of holiday it is.”

“on sale dates can be any dates and they are in no way related to holidays.”

“Sales dates have no connection and no dependency on holiday dates whatsoever. there would have been any dependencies or connections or restrictions they would have been mentioned in the specs.”

[Piazza @ Note 198](#) TA said

“That specs does not talk about any business relations between sales and discounts and holidays. The only thing we can answer you to your question related to holidays was exactly what Leo told you: there must never be any islands in your EER. All things should be connected.

we are learning the EER tools and objects , think how you can use these tools and objects to make all pieces connected. If you cannot make some piece connected then it should not be part of your EER. And conversely if you know some piece needs to be part of EER, think how it should be connected to our diagram.”

[Piazza @ Note 172](#) TA said

“I would suggest that you look at various EER diagrams and think what kind of connections between objects we see in EERs. And then consider what type of connection can be appropriate for holiday.”

8. Store-Product Modeling: According to sentence “all products are available and sold at all stores”, we assume it is a two-sided relationship with (N, N) cardinality, that is saying a store MUST sale N products and same product MUST be sold at N store. But total participation only define the minimum boundary to be one. How to show minimum constraint is N in the EER diagram? **See 9/24 video @03:28 we need to specify the total participation in the relationship. It’s a relationship not a constraint.**



9. City.CityID: Can we add CityID? Because city name may not be a good unique identifier in reality. **No, do NOT add any surrogate key in EER Diagram but underline unique identifier/keys. Specified in 9/24 video @ 8:08, “there is not going to be any state where there are two names for the same city.” Thus, the unique identifier for City is still a composite key (i.e CityName + State).**

Piazza @ Note 228 TA Said “There cannot be two different cities with identical names within one state. There can be two cities with the same name if they are in different states.”

Other Recorded Q&A

1. Is Groundhog Day is a holiday? **No, hard-coded into report rather than treat as a holiday.**

Data Formats and Domain

1. Data types: Should retail_price and maximum_discount be stored as Float or Integer? **Depends on our own design, may change in later phase.**

9/24 Video @26:55 “ You should keep original price and maximum discount but cannot store the derived maximum_discounted_price in DB”.

2. Do we need to match attribute name between EER Diagram, Data Formats part, and Task Decomposition? **Yes, In phase 1 all the attribute name should be exactly same.**

[Piazza @ note214](#)

3. Should we add composite attribute into data type and format part? Or just the attributes that consists of composite attribute? **You only report types of the components of composite attribute.**

[Piazza @ note 231](#)

Constraints

1. Should we define a referential constraint? **No. Answered in the office hour.**
2. What is business logic constraints? **See below.**

[Piazza @ Note 247](#) TA said

“Business logic constraints should be statements on the form of constraints which can be found in the specs and which cannot be expressed in EER there should be a limited number of these statements , not more than 10, usually even less. You should not put there anything about format , and no trivial points , like price should be positive etc.”