Lab 4 First Normal Form (pts. 3)

**Submission requirements:**

Note: Work submitted must belong to you, if it matches with someone else, your work will be graded as 0 and will be reported to Associate Dean.

* Use any software to draw ERD. Take screen capture of the data model and embed it under the question.
* Complete rest of the questions in the same document. Resave the document with your name\_lab#\_db. (E.g Amrit\_lab#\_db)
* SUBMIT ONLY WORD DOCUMENT, PDF or COPY PASTE YOUR ANSWER IN THE TEXT AREA PROVIDED.
* Submit the document in link provided in assignment section. OR complete the lab manually and submit the hardcopy.

Note: if there is many to many relationship exists between entities, it must be resolved.

**INVOICE table:**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| INV\_NUM | PROD\_NUM | SALE\_DATE | PROD\_LABEL | VEND\_CODE | VEND\_NAME | QUANT\_SOLD | PROD\_PRICE |
| 23155 | DD-R89DE9 | 2023-02-03 | Power Drill | 234 | PRO, Inc. | 1 | $99.95 |
|  | AA-T45TW3 | 2023-02-03 | Rotary Sander | 234 | PRO, Inc. | 6 | $59.95 |
|  | GH-U34JR4 | 2023-02-03 | Band Saw | 345 | Evergreen, Inc. | 3 | $49.95 |
| 34521 | DD-R89DE9 | 2023-02-03 | Power Drill | 234 | PRO, Inc. | 4 | $99.95 |
| 45321 | BG-4564B5 | 2023-02-05 | Band Saw | 345 | Evergreen, Inc. | 2 | $49.95 |

Based on the unnormalized data given in the Invoice table, Analyse the given attributes for 1st Normal form, If they are not in 1st NF then make the necessary changes to correct them.

* 1. Perform this task, two ways:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| #(1)INV\_NUM | #(2)PROD\_NUM | SALE\_DATE | PROD\_LABEL | VEND\_CODE | VEND\_NAME | QUANT\_SOLD | PROD\_PRICE |
| 23155 | DD-R89DE9 | 2023-02-03 | Power Drill | 234 | PRO, Inc. | 1 | $99.95 |
| 23155 | AA-T45TW3 | 2023-02-03 | Rotary Sander | 234 | PRO, Inc. | 6 | $59.95 |
| 23155 | GH-U34JR4 | 2023-02-03 | Band Saw | 345 | Evergreen, Inc. | 3 | $49.95 |
| 34521 | DD-R89DE9 | 2023-02-03 | Power Drill | 234 | PRO, Inc. | 4 | $99.95 |
| 45321 | BG-456B5 | 2023-02-05 | Band Saw | 345 | Evergreen, Inc. | 2 | $49.95 |

* + - 1. Single table solution and List the violations that will be created by using single table solution (pts 1.5):
         1. Updating: When updating an value, you must update every instance with that value
         2. Insertion: When inserting a new instance, it may modify the instances that share one of the UIDs.
         3. Deletion: When deleting one instance, it may modify the instances that share one of the UIDs.
      2. Elimination of multivalued attribute into a separate entity. Draw the correct data model to relate the entities. (pts 1.5)

