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| Entity | Description |
| Product | A product |
| Product\_photograph | A photograph of a product |
| Product\_description | A description of a product |
| User | A user of the system |
| Shopping\_cart\_item | An item in a user’s shopping cart |
| Purchase\_order | A purchase order of a user |
| Purchase\_detail | A detail page of a purchase order |
| Review | A review of a product from a user |
| Notification | A message to track the change of status of purchase orders |

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| Entity Name | Attribute Name | Type | Description | Nulls | Unique |
| Product  {Strong Entity} | id | num(8) | Uniquely identifies a product | N | Y |
| name | char(256) | Name of a product | N | N |
| category | char(256) | Category of a product | N | N |
| price | num(10, 2) | Price of a product | N | N |
| out\_of\_stock | boolean | True: product out of stock False: having stock | N | N |
| thumbnail\_location | char(256) | Thumbnail file location of a product | N | N |
| Product\_photograph  {Strong Entity} | id | num(8) | Uniquely identifies a product photograph | N | Y |
| file\_location | char(256) | File location | N | N |
| sequence | num(4) | Sequence is used to determine the order of several photographs of one product | N | N |
| Product\_description  {Strong Entity} | id | num(8) | Uniquely identifies a product description | N | Y |
| attribute\_name | char(256) | Name of a product description | N | N |
| attribute\_value | char(256) | Value of a product description | N | N |
| sequence | num(4) | Sequence is used to determine the order of several descriptions of one product | N | N |
| Entity Name | Attribute Name | Type | Description | Nulls | Unique |
| User  {Strong Entity} | id | num(8) | Uniquely identifies a user | N | Y |
| name | char(64) | User’s name | N | N |
| email | char(64) | User’s email | N | Y |
| pwd | char(256) | User’s password | N | N |
| shipping\_addr | char(256) | User’s shipping address | N | N |
| is\_vendor | boolean | True: user is a vendor  False: user is not a vendor | N | N |
| token | char(64) | Used to authenticate. | Y | N |
| create\_at | char(64) | Used to record the expiration date of token. | Y | N |
| Shopping\_cart\_item  {Weak Entity} | quantity | num(4) | Quantity of a shopping cart item | N | N |
| Purchase\_order  {Strong Entity} | id | num(8) | Uniquely identifies a purchase order | N | Y |
| purchase\_date | date | Purchase date | N | N |
| shipment\_date | date | Shipment date | Y | N |
| cancel\_date | date | Cancel date | Y | N |
| cancelled\_by | num(1) | 0: user; 1: vendor; | Y | N |
| status | num(1) | 0: pending; 1: hold;  2: shipped;  3: cancelled; | N | N |
| Purchase\_detail  {Weak Entity} | product\_id | num(8) | A copy of related product id | N | N |
| product\_name | char(256) | A copy of related product name | N | N |
| product\_price | num(10, 2) | A copy of related product price | N | N |
| quantity | num(4) | Quantity of a purchase item | N | N |
| Review  {Weak Entity} | stars | num(1) | The stars given by a user of a product | N | N |
| review | char(1024) | The review given by a user of a product | Y | N |
| Notification  {Strong Entity} | id | num(8) | Uniquely identifies a notification | N | Y |
| content | char(1024) | Content message of a notification | N | N |
| is\_read | boolean | True: is read  False: is unread | N | N |