Spark Widget Stock

1. Create the following list and then convert the list to a dataframe with a single partition and with six columns named: `'supplier','part','description','price','qty','dt'`

```
widget = [
 ('ACI','41002','Size 2 Widget',76.00,167,'2020-01-22')
,('ACI','41003','Size 3 Widget',110.00,207,'2020-01-11')
,('ACI','41004','Size 4 Widget',117.00,139,'2019-12-27')
,('ACI','4100X','Widget Adjuster',25.00,37,'2020-02-18')
,('ACI','4100Y','Widget Remover',2750.00,25,'2019-12-31')
,('ACI','4100Z','Size 1 Widget',55.00,277,'2020-01-30')
,('ACI','41001','Widget Installer',2500.00,28,'2019-12-10')
,('BIC','41003','Handle',652.00,3,'2020-01-14')
,('BIC','41089','Retainer',225.00,78,'2020-01-10')
,('BIC','41675','Plate',180.00,0,'2019-12-18')]
```

2. Display the result using show().

```
+--------+-----+----------------+------+---+----------+
|supplier| part|     description| price|qty|        dt|
+--------+-----+----------------+------+---+----------+
|     ACI|41002|   Size 2 Widget|  76.0|167|2020-01-22|
|     ACI|41003|   Size 3 Widget| 110.0|207|2020-01-11|
|     ACI|41004|   Size 4 Widget| 117.0|139|2019-12-27|
|     ACI|4100X| Widget Adjuster|  25.0| 37|2020-02-18|
|     ACI|4100Y|  Widget Remover|2750.0| 25|2019-12-31|
|     ACI|4100Z|   Size 1 Widget|  55.0|277|2020-01-30|
|     ACI|41001|Widget Installer|2500.0| 28|2019-12-10|
|     BIC|41003|          Handle| 652.0|  3|2020-01-14|
|     BIC|41089|        Retainer| 225.0| 78|2020-01-10|
|     BIC|41675|           Plate| 180.0|  0|2019-12-18|
+--------+-----+----------------+------+---+----------+
```

3. Use printSchema() to examine the schema of the dataframe you just created. You should see that the qty column is a long and the dt column is a string.

4. Create a new dataframe with the column **qty** converted to an integer and **dt** converted to a date. The cast() function on the

column class is used to convert the type: p.dt.cast('date'). You can examine the schema of your new dataframe using printSchema.

5. Define a new dataframe that only includes rows where the supplier is ACI and with an extra column that multiplies quantity with price (price x qty). The result should be:

```
+--------+-----+----------------+------+---+----------+-------------+
|supplier| part|     description| price|qty|        dt|(price * qty)|
+--------+-----+----------------+------+---+----------+-------------+
|     ACI|41002|   Size 2 Widget|  76.0|167|2020-01-22|      12692.0|
|     ACI|41003|   Size 3 Widget| 110.0|207|2020-01-11|      22770.0|
|     ACI|41004|   Size 4 Widget| 117.0|139|2019-12-27|      16263.0|
|     ACI|4100X| Widget Adjuster|  25.0| 37|2020-02-18|        925.0|
|     ACI|4100Y|  Widget Remover|2750.0| 25|2019-12-31|      68750.0|
|     ACI|4100Z|   Size 1 Widget|  55.0|277|2020-01-30|      15235.0|
|     ACI|41001|Widget Installer|2500.0| 28|2019-12-10|      70000.0|
+--------+-----+----------------+------+---+----------+-------------+
```