**Question:-**



**Solution:-**

First we need to register piggybank.jar

We have created reference named A below and we have loaded the file DelayedFilights.csv and we have loaded it using **CSVExcelStorage()** function. Now relation is referring the file named **DelayedFlights.csv**.



Totally there are 29 columns in DelayedFlights.csv. We can call them as $0 to $28 depending on the column position. Here we took 3 columns and named $17 as origin, $18 as dest, $24 as diversion. Now we have **typecasted.** For each and every row of A, these 3 columns will be generated(retrieved) and it will be referred by **B**.



We have filtered relation B by origin as not null and dest as not not null and diversion as 1 so that **we can get the valid non null origin and destination pairs with diversion** and is referred by relation C.



Now we need to get diverted for both origin and dest pairs. So we need to **group them together as mentioned below and is referred by relation D.**



For each group (origin and destination pairs) in D, we are c**ounting the diversion to find the maximum diversion** and is referred by relation E.



Now we have ordered relation E by $1 (count of diversion for origin and destination pairs) in **descending order** and is referred by relation F.



Now we have retrieved the first 10 rows of F to get the origin and destination pairs with maximum number of diversion.



**OUTPUT:-**

