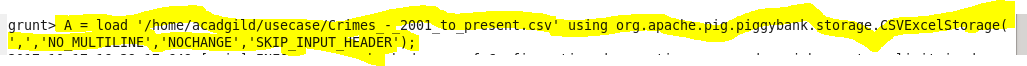


**Solution:-**

First we need to register piggybank.jar



We have created reference named A below and we have loaded the file **Crimes\_-2001\_to\_present.csv**. and we have loaded it using **CSVExcelStorage()** function. Now relation is referring the file named **Crimes\_-2001\_to\_present.csv**.



Totally there are 22 columns in **Crimes\_-2001\_to\_present.csv**. We can call them as $0 to $21 depending on the column position. Here we took 3 columns and named $5 as primary\_type, $8 as Arrest and $11 as District. 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  **District as “not null”,** primary\_type as “THEFT” and Arrest as “true”**.**



We have grouped relation C by District.



Now for each group in D, we are counting the number of primary\_type. So that we can get the no of Arrest in each district and is **referred by relation E.**



We have loaded the file that is referred by Relation E using **dump command.**



**OUTPUT:-**

