# Quiz Solutions

## Quiz 1

Mapper:  Parser parses the records (we don't know their formats, though this would need to be found out) and then uses data that is hard to change as the key and the rest of the data as values.  Since the document use varied, we can make up a key as:

Name, Date Of Birth, City of Birth

and use as values:

Document type, Document ID, test center location, test date and time, test score

Reducer:  The reducer just combines records with the same key and emits

<u>Name</u>, <u>Date of Birth</u>, <u>City of Birth</u>, Document Type, Document ID, scores

where scores is a list of entries of the form (test center location, test data and time, test score).

There is still a chance that two people will have their results mingled up, a problem called disambiguation, but this is good enough to flag records to be investigated.


## Quiz 2


 Mapper:  The parser creates values for the fields:  SSN, Month - Year, Wages and creates key -value pairs where the key is the SSN and the other two fields make up the value.  Because we are only interested in the 1000 or so applicants from Fort Lauderdale (a famous retirement place), we send a list of their SSN to all the mappers.  The mapper then uses the list to send only key - value pairs with SSN in this list to the reducers. Optionally, we can agglomerate records with the same SSN.

Reducers:  Agglomerate records with the same SSN.

## Quiz 3

Mapper:  Extract partial license plate numbers as the key.  This is possible because the scofflaw has altered the license plate in a certain way.  Add as values all the other data that the AI offers up such as vehicle description and direction of travel.  Also include the time stamp.

Reducers:  Generate a list of sightings for all vehicles with the same full or partial license plate.  Order the list according to time stamps.  This now constitutes a record of all routes taken by the vehicle.

Observation:  A scofflaw can still change the license plate and generate different set of records, even when on a trip.  But this is now much less convenient.