**Introduction to NoSQL**

* A NoSQL database provides a mechanism for storage and retrieval of data that is modeled in means other than the tabular relations used in relational databases. It is a very new technology.
* Agreed features :

1. Not Relational.
2. Highly distributable and scalable.
3. High availability and fault tolerant.
4. Supports sparse and large amounts of data.
5. Trades performance for transaction consistency.

* Common data models :

1. Column stores.
2. Document stores.
3. Key-Value stores.
4. Graph stores.

* Benefits over Relational model :

1. Supports large volumes of semi-structured data without pre-defined schema.
2. Integrates with object-oriented programming techniques easily.
3. Scales “out”

* Sharding
* Replication
* Shortcomings :

1. Non-relational
2. Technology is non-mature
3. Lack of common query tool for use with analytics and business intelligence.

* NoSQL Products :
* Oracle NoSQL
* Cassandra
* BigTable
* SimpleDB
* MongoDB
* CRUD – Refers to database commands that Create, Read, Update, and Delete.
* Create
  + db.restaurants.count()
  + db.restaurants.insert( {restaurant\_id: “123456"} )
  + db.restaurants.count()
* Read
  + db.restaurants.find({name:"Carvel Ice Cream"}).pretty();
  + Update
  + db.restaurants.update( {restaurant\_id: “123456"},
  + {$set: {name: “Happy Garden“, city:”Maryville”}})
  + db.restaurants.find( {restaurant\_id: “123456"} ).pretty()
* Delete:
  + db.restaurants.count()
  + db.restaurants.count({name:"Carvel Ice Cream"});
  + db.restaurants.find({name:"Carvel Ice Cream"}).pretty();
  + db.restaurants.remove({name:"Carvel Ice Cream"});
  + db.restaurants.count()