**1.Hierarchical Model** (1960)  
- Depicts many 1 to many relations. Upside down tree.  
-A folder structure, with one parent, is hierarchical. (Parent/root folder)

-Disadvantage: Making queries was difficult/complex to manage  
-Advantage: Understanding data

**2.Network Model**

-Could use many to many relationships  
-added standards:  
 Schema: Design View  
Subschema: A limited (not everything seen) design view  
 Data Manipulation Language,  
 Schema Data Definition Language

**3.Relational Model(1970)**

-hide complexities (ie pointers, navigation paths)  
-users see related tables  
-querries  
-linking relating tables  
-(1:1) (1:\*) (\*:\*)  
- 0..\* can have 0 relations or many  
-SQL language/querry language  
  
  
**4.ER Model**-1976 Chen introduced a graphical representation of 3.  
-Table is always singular ie Painter, not Painters  
  
  
  
XML: Human and Machine readable  
-focuses on effective internet interfaces  
  
Web Data: browsing patterns, customer preferences, purchase history ect

Big Data: The movement to find new, better ways to manage and decipher large amounts of data

**NoSql Database**  
key value model: Each row represents one attribute/value of one entity instance.  
  
  
  
**DEgrees of Data Abstraction**  
  
Hardware and software dependence (low) and independence (high)

Ie, the user does not need to worry about where the data is stored, or what software needed to view the egWebpage  
  
Conceptual model: Designers view (high level abstraction)  
---- Logical independence  
Internal model: DBMS view  
---- Physical Independence  
Physical Model: hardware and software (low level abstraction)