**Data: Structural vs Data Dependence/Independance**

**Unstructured Data Example (as taking notes on a piece of paper):**

James Walker Age:25 engineer BCIT 1999 to 2005 ID: 456

Smith,Harry,Doctor, 1995-2006, ID: 234 UBC age - 23

**Structured Data Example (as contained in a file with column names such as on a spread sheet)**

***ID Surname FirstName Age Profession Last College Start Year End Year (Column Names)***

234 Walker James 25 Engineer BCIT 1999 2005

456 Smith Harry 23 Doctor UBC 1995 2006

**Structural Dependence vs Structural Independence**

With File systems, if we want to add a new column (e.g. ‘***Nationality***’) or we want to change the length of a column from 20 characters to 25 characters, we would have to tell all the programs that access the file about the change (**Structural Dependence**). With Database systems, we do not have to do this. We only need to tell the DBMS, once (**Structural Independence**)

**Data Dependence vs Data Independence**

Assuming we initially defined the ***ID*** column as numeric and now we want to change it to alphanumeric with a length of 10 characters. With File systems, we would have to tell all the programs that access the file about the data type change (**Data Dependence**). With Database systems, we do not have to do this. We only need to tell the DBMS, once (**Data Independence**)