### **Discussion Assignment**

In your own words, define the following terms. Provide an example to illustrate each term. Your example may be of your own choosing but should illustrate each term in the context of a relation using a real-world object such as a car, book, course, university, etc.

**Terms defined in the chapter.**

1. *Attribute*: a characteristic or feature of the data. Eg. sex is an attribute of a human being. *Male* or *female* (or *X* for any other sex/gender) would be examples of values for that domain.
2. *Domain:* The set of all possible values for an attribute. A ‘pool of values’[(Sharma et al. 2010)](https://paperpile.com/c/2vyIrd/BHYt). Two attributes or more can have their values come from the same domain, which means operations between those attributes are possible. Eg. if the University is an attribute that describes Universities throughout Canada, then the domain of University would be the set of all Universities (eg. UofA, UofS, UBC, et al.).
3. *Relation:* an abstract but important term refers to what overall encompasses the dataset. It consists of a heading and a body.
4. *Heading:* heading is essentially a collection of all the attributes that make of the dataset. If your data forms a table, it is the top row or header which contains the ‘titles’ of each column of data. Eg. in the tuple example below, the Heading would be: University, Number of Students, Province, TuitionCost.
5. *Body:* The body is the entire collection of tuples that make up the dataset, or in layman terms and using the table analogy, the set of all rows in the table underneath the top row, at one point in time (as more rows can continue to be taken away or added). In the university example, we would have a tuple for each school, all of these together form the ‘body’.
6. *Relation degree:* the number of attributes total is the relation degree. In the example, we have four or a tertiary relation.
7. Cardinality: the number of tuples of the relation. In the example, if we had say 12 schools total, there would ultimately be 12 rows of data and 12 tuples, therefore a cardinality of 12.
8. *Tuple:* an ordered set of values. Also termed a ‘row’ in a data table. For example, If we have a set of attributes (University, Number of Students, Province, TuitionCost), a tuple example would be: UofA, 20000,Alberta,5800.

|  |  |  |  |
| --- | --- | --- | --- |
| **University** | **NumberStudents** | **Province** | **TuitionCost** |
| UofA | 20,000 | Alberta | 5800 |
| UofS | 19,000 | Saskatchewan | 4000 |
| UBC | 40,000 | BritishColumbia | 8000 |

**Reference:**

[**Sharma, Neeraj, Liviu Perniu, Raul F. Chong, Abhishek Iyer, Chaitali Nandan, Adi-Cristina Mitea, Mallarswami Nonvinkere, and Mirela Danubianu. 2010. “Database Fundamentals.” *IBM Canada*, 96–101.**](http://paperpile.com/b/2vyIrd/BHYt)