

## CS 457 - Homework Assignment 1: Data Types

Fahad Ahmed – fs05847

### Part 1

Time	<b>Interval</b> because it is continuous, measurable, and has zero-point origin.
Latitude	<b>Interval</b> because it is continuous, measurable and it can be positive and negative and has zero-point origin.
Longitude	<b>Interval</b> because it is continuous, measurable and it can be positive and negative and has zero-point origin.
Depth	<b>Ratio</b> because it is interval data with clear definition of zero and has “true zeros”. It can be an integer or floating number.
Mag	<b>Ratio</b> because it is interval data with a clear definition of zero and has “true zero”. It can be an integer or floating number.
Magtype	<b>Nominal</b> because it cannot be sorted and gives a category to each value.
Nst	<b>Ratio</b> because data gives some countable value
gap	<b>Ratio</b> because data gives some countable value
dmin	<b>Ratio</b> because data gives some countable value
rms	<b>Ratio</b> because data gives some countable value
net	<b>Nominal</b> because it cannot be ordered. And it gives a category
id	<b>Nominal</b> because it cannot be ordered. And it gives a category
updated	<b>Interval</b> because it is continuous, measurable, and has zero-point origin.
Place	<b>Nominal</b> because it cannot be ordered. And it gives a category
Type	<b>Nominal</b> because it cannot be ordered. And it gives a category
Horizontal	<b>Ratio</b> because the data is measured quantity and it has clear definition of zero and has “true zero” and data is also floating number
deptherror	<b>Ratio</b> because the data is measured quantity and it has clear definition of zero and has “true zero” and it can be floating number
magerror	<b>Ratio</b> because the data is measured quantity and it has clear definition of zero and has “true zero” and it can be floating number

magNst	<b>Ratio</b> because data gives some measured quantity and has clear definition of zero and has “true zero”.
status	<b>Nominal</b> because the data cannot be ordered, and each gets some category.
Location	<b>Nominal</b> because the data cannot be ordered, and each gets some category.
magSource	<b>Nominal</b> because the data cannot be ordered, and each gets some category

## **Part 2:**

1. **Interval** because data has intervals and is continuous. Data has no zero-value ratio.
2. **Ratio** because data gives measured value and data is an interval with clear definition of zero and has “true zeros”.
3. **Ordinal** because data can be sorted but does not have a numerical value.
4. **Interval** because data is continuous and has zero origins and it can be positive and negative.
5. **Ordinal** because data can be sorted but it is not numerical, and it also gives category to each value.
6. **Ratio** because data is numerical, has intervals but it has fix zero value starting from sea level.
7. **Ratio** because data will give some measured number and it has a clear definition of zero and has “true zero”.
8. **Nominal** because ISBN number cannot be sorted, and it is countably finite, and we cannot addition operations on this data.
9. **Ratio** because with following values data can be multiplied and added to give some meaning and it can have zero ratios.
10. **Ordinal** because data can be ordered/ranked, and it is countably finite plus it gives category to each value.
11. **Interval** because data has intervals and is continuous, has intervals.
12. **Ratio** because it has a clear definition of zero and has “true zero”, it is measurable and comparable, multiplication, addition can be performed.

## **Part 3:**

### **Nominal:**

- Gender
- Major
- nationality of every student.

Reason: These cannot be ranked, and they give category

**Ordinal:**

- letter grade in each course
- batch/academic year
- education level: under-graduation, graduation, PhD

Reason: These can be ranked, ordered, compared and they give category

**Interval:**

- GPA
- credit hours
- time of admission.

Reason: These data are quantitative, continuous, and has intervals

**Ration:**

- Number of courses taken in each semester
- fees per semester
- number of students enrolled in a class

Reason: these data are quantitative and it can have true zero value.