

CS 457 Assignment 1

Ali Asghar Yousuf

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Part I

Attribute	Scale	Explanation
time	Interval	Time is an interval scale because it lacks a true zero point.
latitude	Interval	Latitude is interval as it has a natural order within its defined range.
longitude	Interval	Longitude is interval with a natural order within its defined range.
depth	Ratio	Depth is a ratio scale, measured in meters, and supports all mathematical operations.
mag	Ratio	Magnitude is ratio with a natural ordering indicating the severity of earthquakes.
magType	Nominal	MagType is nominal with no logical order (e.g., ml, md).
nst	Ratio	nst is ratio, supporting mathematical operations.
gap	Ratio	gap is ratio, supporting mathematical operations.
dmin	Ratio	dmin is ratio, supporting mathematical operations.
rms	Ratio	rms is ratio, supporting mathematical operations.
net	Nominal	net is nominal with no logical order.
id	Nominal	id is nominal with no logical order.
updated	Interval	Updated time is interval due to the lack of a true zero point.
place	Nominal	Place is nominal because populated places cannot be ordered.
type	Nominal	Type is nominal with no logical order.
horizontalError	Ratio	horizontalError is ratio, supporting mathematical operations.
depthError	Ratio	depthError is ratio, supporting mathematical operations.
magError	Ratio	magError is ratio, supporting mathematical operations.
magNst	Ratio	magNst is ratio, supporting mathematical operations.
status	Nominal	Status is nominal with no logical order (e.g., automatic, reviewed).
LocationSource	Nominal	LocationSource is nominal with no logical order.
magSource	Nominal	magSource is nominal with no logical order.

Part II

Item	Data Type	Explanation
Time (AM or PM)	Nominal	Time is measured using categories (AM and PM) with no inherent order or mathematical operations.
Brightness (measured by a light meter)	Ratio	Brightness, measured by a light meter, is a continuous numerical variable with a true zero point, allowing for meaningful mathematical operations.
Brightness (measured by people's judgments)	Ordinal	Brightness, as perceived by people's judgments, can be ordered based on relative brightness but lacks a consistent interval scale or a true zero point.
Angles (degrees between 0° and 360°)	Interval	Angles measured in degrees have a natural order and interval scale, but they lack a true zero point (0° does not signify the absence of angle).
Medals (Bronze, Silver, Gold)	Ordinal	Medals awarded at the Olympics are ordinal categories which can be ordered.
Height above sea level	Ratio	Height above sea level is a continuous numerical variable with a true zero point, allowing for meaningful mathematical operations.
Number of patients in a hospital	Ratio	The number of patients is a continuous numerical variable with a true zero point, enabling meaningful mathematical operations.
ISBN numbers for books	Nominal	ISBN numbers are unique identifiers for books and are nominal, with no inherent order or mathematical operations.
Ability to pass light (opaque, translucent, transparent)	Ordinal	The ability to pass light represents ordinal categories which can be ranked based on the amount of light they let through.
Military rank	Ordinal	Military ranks have a clear order and can be ranked based on hierarchy, but the intervals between ranks may not be consistent.
Distance from the center of HU campus	Ratio	Distance is a continuous numerical variable with a true zero point, allowing for meaningful mathematical operations.
Density of a substance (grams per cubic centimeter)	Ratio	Density is a continuous numerical variable with a true zero point, enabling meaningful mathematical operations.

Part III

Attribute	Data Type	Explanation
Gender	Nominal	Gender is a categorical variable with no inherent order.
Major	Nominal	Majors represent categories with no inherent order.
Residential Status	Nominal	Residential statuses (e.g., On-campus, Off-campus) are categorical with no inherent order.
Academic Year	Ordinal	Academic years (e.g., Freshman, Sophomore) can be ordered based on admission year.
Class Level	Ordinal	Different classes have different levels such as 100, 200, 300, etc. which are based on the difficulty level of that course
Scholarship	Ordinal	The % of scholarship is an ordinal variable which can be ranked.
Family Income	Ratio	Family income is a continuous numerical variable with a true zero point, enabling meaningful mathematical operations.
Attendance Rate	Ratio	Attendance rate is a continuous numerical variable with a true zero point, allowing meaningful mathematical operations.
GPA	Ratio	GPA is a continuous numerical variable with a true zero point, supporting meaningful mathematical operations.
SAT Score	Interval	SAT scores for attempted tests are continuous numerical values with no true zero point.
Class Timings	Interval	Each student has different class timings, which is a continuous numerical variable with no true zero point.
IQ Score	Interval	IQ scores are continuous numerical values with no true zero point.