**Niharika Peddaiahgari**

**Student id: 800964922**

2. Classify the following attributes as binary, discrete, or continuous. Also

classify them as qualitative (nominal or ordinal) or quantitative (interval or

ratio). Some cases may have more than one interpretation, so briefly indicate

your reasoning if you think there may be some ambiguity.

**Example:** Age in years. **Answer:** Discrete, quantitative, ratio

(a) Time in terms of AM or PM.

**Binary, qualitative, ordinal**

(b) Brightness as measured by a light meter.

**Continuous, Quantitative, Ratio**

(c) Brightness as measured by people’s judgments.

**Discrete, Qualitative, Ordinal**

(d) Angles as measured in degrees between 0*◦* and 360*◦*.

**Continuous, Quantitative, Ratio**

(e) Bronze, Silver, and Gold medals as awarded at the Olympics.

**Discrete, Qualitative, Ordinal**

(f) Height above sea level.

**Continuous, Quantitative, Ratio**

(g) Number of patients in a hospital.

**Discrete, Quantitative, Ratio**

(h) ISBN numbers for books. (Look up the format on the Web.)

**Discrete, Qualitative, Nominal**

14. The following attributes are measured for members of a herd of Asian elephants:

weight, height, tusk length, trunk length, and ear area. Based on

these measurements, what sort of similarity measure from Section 2.4 would

you use to compare or group these elephants? Justify your answer and explain

any special circumstances.

**(ans)**

**The given attributes of Asian elephants have the similarity of being quantitative. Yet their difference is that they are measured in different units (scales). Weight measured in pounds, height, tusk length, trunk length are measured in meters and ear area in square meters. Comparing these data sets is a little tricky as these data sets are co-related. When attributes are co-related we can use ‘Mahalanobis Distance’. This is a unit less similarity measure.**