N5 Computing Science Homework

# \*THIS HOMEWORK EXERCISE IS DUE FOR THURSDAY 9TH NOVEMBER\*

1. David works for NASA and creates a database to store information about meteor showers. The METEOR table is shown below.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Code** | **Name** | **Type** | **Rate** | **Dec** | **Comet** | **Observations** |
| M001 | Quadrantids | Cygnids | 100 | 50° | Unknown | Average speeds |
| M002 | Ursids | Cygnids | 5 | 76° | Tuttle | Average speeds |
| M003 | Geminids | Cygnids | 1 | 32° | Unknown | Average speeds |
| M004 | Kappa  | Cygnids | 10 | 55° | Unknown | Bright, exploding fireballs |
| M005 | Kappa  | Cygnids | 10 | 55° | Unknown | Bright, exploding fireballs |
| M006 | S.Iota  | Aquarids | 15 | -15° | Unknown | Double radiant |
| M007 | N.Iota  | Aquarids | 13 | -6° | Unknown | Double radiant |
| M008 | Beta  | Taurids | 10 | 19° | Encke | Double radiant |
| M009 | S.Delta  | Aquarids | 36 | -17° | Unknown | Slow, double radiant |
| M010 | N.Delta  | Aquarids | 30 | 0° | Unknown | Slow, double radiant |
| M011 | Capricornids | Taurids | 15 | -15° | Unknown | Slow, double radiant |
| M012 | Capricornids | Taurids | 15 | -15° | Unknown | Slow, double radiant |
| M013 | Ophiuchids | Cygnids | 12 | -20° | Unknown | Slow, double radiant |
| M014 | Perseids | Taurids | 70 | 58° | Unknown | Very fast |
| M015 | Phoenicids | Taurids | 25 | -55° | Unknown | Very fast |
| M016 | Leonids | Taurids | 23 | 22° | Tempel-Tuttle | Very fast |
| M017 | Eta  | Aquarids | 18 | 0° | Halley | Very fast |
| M018 | Beta  | Perseids | 12 | 43° | Swift-Tuttle | Very fast |

David notices data entry errors. The two Kappa Cygnids meteors have a rate of 12 and not 10 as entered in the database.

He writes the following SQL statement to correct these errors.

|  |
| --- |
| UPDATE meteorSET rate = 10WHERE type = “Cygnids”; |

a) Explain why Davids’s SQL statement would not correct these errors. (1)

b) Explain why David’s SQL statement would create additional errors in the database. (1)

c) David wishes to remove the following meteor from the database

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| M011 | Capricornids | Taurids | 15 | -15° | Unknown | Slow, double radiant |

Evaluate the effect of running the SQL statement below: (2)

|  |
| --- |
| DELETE FROM meteorWHERE name = “Capricornids” AND type = “Taurids” |

d) Describe a better solution David could use to remove the meteor from the database. (1)

2. Angela uses a database to store personal information about her company’s customers. State two implications of the Data Protection Act for Angela when storing this information. (2)

**Total: 7 Marks**