**Lab 1: Relations**

Complete the following exercises off-platform. This is ungraded and for your own learning. Write down your answers ....

**Relation 1**

Given the relation below, answer the questions:

**GradeBook**

| **ID** | **Name** | **Major** | **Quiz1** | **Quiz2** | **Quiz3** | **Quiz4** |
| --- | --- | --- | --- | --- | --- | --- |
| 001 | Harry | Magic | 90 | 90 | 80 | 100 |
| 002 | Hermione | Magic | 100 | 100 | 100 | 100 |
| 007 | Ron | Magic | 80 | 100 | 70 | 100 |
| 301 | Dobby | Service | 95 | 95 | 95 | 95 |
| 302 | Severus | Education | 90 | 90 | 99 | 100 |
| 399 | Albus | Management | 100 | 100 | 99 | 100 |

What is the name of the relation: **GradeBook**

What are the attributes of the relation: **ID, Name, Major, Quiz1, Quiz2, Quiz3, Quiz4**

What are the tuples of the relation (pick one): (**001, Harry, Magic, 90, 90, 80, 100)**

What is the degree of the relation: **7**

What is the cardinality of the relation: **6**

What is the possible domain of attribute ID: **1-1000**

What is the possible domain of attribute Name: **characters**

What is the possible domain of attribute Major: **The majors categories**

What is the possible domain of attribute Quiz1 - 4: **0-100**

Choose some super keys for this relation:

If there is no duplicate name of people:

What might be candidate keys? **ID, Name**

What might be the primary key? **ID**

What might be the alternate key? **Name**

If there is no duplicate name of people in the same major, what might be candidate keys?

What might be candidate keys? **Name, ID, Major**

What might be the primary key? **ID**

What might be the alternate key? **Name, Major**

If there are duplicate names of people in the system, what might be candidate keys?

What might be candidate keys? **ID**

What might be the primary key? **ID**

What might be the alternate key? **N/a**

**Relation 2**

For the following relation, answer the questions.

**ProductDetails**

| **SKU** | **Name** | **VendorID** | **Price** | **Date** | **Quantity** | **Location** | **Description** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| KB320 | MouseMat | V1230 | 13.32 | 01/01/2019 | 3000 | A3 | Discontinued |
| YZ783 | MouseMat | V3002 | 10.00 | 03/01/2019 | 1000 | A3 | Discontinued |
| IU990 | Mouse | V3333 | 19.00 | 12/01/2019 | 700 | A1 |  |
| IU370 | Mouse | V3333 | 15.00 | 01/01/2020 | 500 | A1 |  |
| YZ783 | MouseMat | V3012 | 9.90 | 05/01/2020 | 1000 | A3 |  |
| YZ783 | MouseMat | V3012 | 8.90 | 05/01/2021 | 1000 | A3 |  |

What is the name of the relation: **ProductDetails**

What are the attributes of the relation: **SKU, Name, VendorID, Data, Quantity, Location, Description**

What are the tuples of the relation (pick one): **The rows are the tuples**

What is the degree of the relation: **8** (number of attributes)

What is the cardinality of the relation: **6** (number of tuples)

What is the possible domain of attribute SKU: **2 characters followed by 3 numbers**

What is the possible domain of attribute Name: **patient name**

What is the possible domain of attribute VendorID: **capital “V” followed by 4 numbers**

What is the possible domain of attribute Price: **Dollar amounts in decimal format**

What is the possible domain of attribute Date: **Dates in mm/dd/yyyy format**

What is the possible domain of attribute Quantity: **positive integers numbers**

What is the possible domain of attribute Location: **A letter followed by a number**

What is the possible domain of attribute Description: **“Discontinued”?**

Choose some super keys for this relation:

What might be candidate keys? **SKU+VendorID+Price, SKU+VendorID+Date**

What might be the primary key? **SKU+VendorID+Date**

What might be the alternate key? **SKU+VendorID+Price**