* 1. Describe the five Relational Model concepts with example with relation.
     1. Can’t use Same name to different table(Unique name)
     2. Can’t use Multi value attribute
     3. Each attribute writhing a table has a unique name
     4. Use data to atomic data
     5. It’s not important about rows and cols index
  2. What is Data Model?
     1. Database eke data vala connection penna hadapu kramayak
  3. Write meaning of these words.
     1. **Relation**
     2. **Attribute**
        1. **Key**
        2. **Non Key**
        3. **Derived Attribute**
        4. **Composite Attribute**
     3. **Domain Attribute ekatada dala thiyana adala data tika**
     4. **Tuple**
     5. **Cardinality**
     6. **Degree**
  4. Answer the Questions using this relation.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| NIC | fName | lName | no | street | city | Tp | Email |
| 900592035v | Amal | Perera | 15 | Samagi Mw | Matara | 0412215221 | amal@gmail.com |
| 854445522v | Nishani | Silva | 45 | Temple Rd | Colombo5 | 0112255544 | nisha@cmb.lk |

* + 1. Describe the Super key and give the 5 examples for Super Key.
       1. Relation eka hadunaganna yodaganna keys
    2. Describe the Candidate key and give the 2 examples for Candidate Key.
       1. Primary key ekak venna sudusama keys Super keys
    3. Describe the Primary key alternate key.
       1. Alternate key ekak yanu Candidate key valin ithuruvana keys
  1. Describe the Entity integrity and Referential integrity.
  2. What is the Relational Algebra?
  3. What are the five basic operations in relational algebra?
  4. Write relational algebra expressions using following relation.

**Student**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| sid | Fname | lname | Age | City |
| S001 | Hasitha | Perera | 23 | Gampaha |
| S002 | Nimal | Jayasinghe | 38 | Kadawatha |

* + 1. Get all information about student.
    2. Get full name which students are live in Gampaha.
    3. Get sid which students are age below 30 and live in Kadawatha.

1. Write meaning of given symbols.

|  |  |
| --- | --- |
|  |  |
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|  |  |
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* 1. Write Relational Algebra expression for following questions.

**Item Favor**

|  |  |
| --- | --- |
| ItemID | ItemName |
| I001 | Mango |
| I002 | Apple |
| I003 | Orange |
| I004 | Grapes |

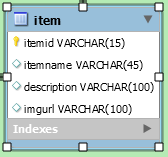
|  |  |
| --- | --- |
| ItemID | CusID |
| I001 | C002 |
| I001 | C001 |
| I002 | C001 |
| I003 | C003 |
| I003 | C001 |
| I001 | C003 |
| I004 | C001 |

**Customer**

|  |  |
| --- | --- |
| CusID | CusName |
| C001 | Amal |
| C002 | Nimal |
| C003 | Sunimal |

* + 1. What are the Amal’s favorite foods ID?
    2. Which customers are like Mango and Orange?
    3. Which foods are like by Amal and Sunimal?
    4. What are the Nimal’s not favorit foods?

1. ..
   1. Draw a Conceptual ER Flower Shop.
      1. Manage Customer Data, Supplier Data, Flower Selling Data, Flower Buying Data.
      2. Mark Relationship between Entity using crows foot nations.
   2. Write 2 example for each expression.
      1. Entity
      2. Key Attribute
      3. Multivalued Attribute
      4. Derived Attribute
   3. Draw a Physical ER model for Conceptual ER in **3.a.**
   4. What is database?
   5. What is DBMS?
   6. What is a Database system?
   7. What are the advantages of DBMS and disadvantage in File Processing System?(write 5 points for each one)
   8. Describe the three levels of data abstraction?
   9. What is degree of a Relation?
   10. What is the Relationships?
   11. What is DDL and DML?
   12. .



* + 1. Write DDL code for to create this relation (using SQL).
    2. Write insert,update,delete,search query for item table.
  1. What is normalization?
  2. Describe the following Normalization forms?
     1. 1 NF (Normal Form)
     2. 2 NF (Normal Form)
     3. 3 NF (Normal Form)
  3. Normalize this Table to 3rd Normalization Form
     1. Draw table for every Normalization form

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| INVID | Date | CusID | CusName | ItemID | ItemName | Qty | Total |
| IN001 | 01/01/2015 | C001 | Amal Perea | I2  I4  I5 | Apple  Orange  Grapes | 3  10  500 | 180  400  100 |
| IN002 | 02/01/2015 | C005 | Sunil Nishantha | I7  I5 | Mango  Grapes | 5  1.5 | 200  300 |