**Phase III - Normalization & Querying DB**

1. **Normalize all of your tables to third normal form.**

**BCNF DEFINITION:**A relation schema R is in BCNF if for every FD X→ Y associated with R either – Y ⊆ X (i.e., the FD is trivial) or

– X is a superkey of R

**PERSON**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pid** | FirstName | LastName | MiddleName | Address | Gender | Phone Number |

1. **Draw a dependency diagram for each table from Phase III a.**

**PERSON**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pid** | FirstName | LastName | MiddleName | Address | Gender | Phone Number |

**EMPLOYEE**

|  |  |
| --- | --- |
| **EPid** | StartDate |

**ACLASSPASSENGER**

|  |
| --- |
| **Apid** |

**ASTARPASSENGER**

|  |  |
| --- | --- |
| **ASEpid** | **ASApid** |

**CHILDREN**

|  |  |  |
| --- | --- | --- |
| **CApid** | **CName** | CAge |

**GUEST**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **GASEpid** | **GASAPid** | **GuestId** | GName | ContactInfo |

**BUSDRIVER**

|  |
| --- |
| **BEPid** |

**STAFF**

|  |
| --- |
| **SEPid** |

**BUS**

|  |  |  |
| --- | --- | --- |
| **LicenseNo** | No\_Seats | BusNo |

**TERMINAL**

|  |  |  |  |
| --- | --- | --- | --- |
| **TerminalId** | **Loc** | **Date** | **Time** |

**DRIVES**

|  |  |  |  |
| --- | --- | --- | --- |
| **DBEPid** | **DLicenseNo** | **Date** | **Hours** |

**PARKED**

|  |  |
| --- | --- |
| **PTerminalId** | **PLicenseNo** |

**TICKET**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **TicketId** | **TPid** | **BusId** | **SeatNo** | **Price** | **TSEPid** |

**DARTPASS**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **DPassID** | Expiry | Price | DPSEPid | DPPid |

**PAYMENT**

|  |  |  |  |
| --- | --- | --- | --- |
| **PayId** | Method | StaffId | PPid |

**TRAVELCARD**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **TravelCardID** | Expiry | Price | StaffId | TCASAPid | TCASEPid |

**PROMOTIONS**

|  |  |  |
| --- | --- | --- |
| **PDPassID** | **PromotionId** | **PromotionName** |

**ROUTE**

|  |  |
| --- | --- |
| **Rid** | **RouteName** |

**BUSSTOP**

|  |  |
| --- | --- |
| **BsId** | BsName |

**TIMETABLE**

|  |  |  |  |
| --- | --- | --- | --- |
| **TTId** | Day | StTime | endTime |

**OVERALLBUSINFO**

|  |  |  |  |
| --- | --- | --- | --- |
| **ORid** | **OBsId** | **OTTId** | OLicenseNo |

1. **Write SQL statements to create database, tables and all other structures. Primary key and foreign keys must be defined as appropriate.**