

City Bus Transport System

Minimal set of Functional Dependencies

Employee:-

E_ID -> E_Name

E_ID -> Add_Line1

E_ID -> Add_Line2

E_ID -> Pincode

E_ID -> E_Type

Key - E_ID

IN BCNF

Employee_type:-

E_Type_No -> E_Type_Name

E_Type_No -> D_No

E_Type_Name -> E_Type_No

E_Type_Name -> D_No

Keys - E_Type_No, E_Type_Name

IN BCNF

Department:-

D_No -> D_Name

D_No -> Manager_ID

D_Name -> D_No

D_Name -> Manager_ID

Manager_ID -> D_No

Manager_ID -> D_Name

Keys - D_No , D_Name, Manager

IN BCNF

Bus:-

Bus_No -> Bus_Number_Plate

Bus_No -> Bus_Type

Bus_No -> Daily_Collection

Bus_Number_Plate -> Bus_No

Bus_Number_Plate -> Bus_Type

Bus_Number_Plate -> Daily_Collection

Keys - Bus_No, Bus_Number_Plate

IN BCNF

Bus_Type:-

Bus_Type_Name -> Base_Fare

Bus_Type_Name -> Seats

Bus_Type_Name -> Rate_Per_Kilometer

Key - Bus_Type_Name

IN BCNF

Bus_Stop:-

Bus_Stop_Code -> Bus_Stop_Name

Bus_Stop_Name -> Bus_Stop_Code

Keys - Bus_Stop_Code, Bus_Stop_Name

IN BCNF

Bus_Stand:-

Bus_Stand_Stop_Code -> Has_Garage

Bus_Stand_Stop_Code -> Number_Of_Platforms

Key - Bus_Stand_Stop_Code

IN BCNF

Has_Route:-

{ Route_No, Stop_No, Stop_Code } -> Distance_From_Start

{ Route_No, Stop_No, Stop_Code } -> Estimated_Time_From_Start

Key - {Route_No, Stop_No, Stop_Code }

IN BCNF

Buses_in_Garage:-

{ Bus_No, Route_No } -> Starting_time

Key - { Bus_No, Route_No }

IN BCNF

Sold_Passes:-

{ Bus_Type, Pass_Type, Route_No } -> Pass_Cost

{ Bus_Type, Pass_Type, Route_No } -> Passes_Sold

Key - { Bus_Type, Pass_Type, Route_No }

IN BCNF