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**DATABASES**

October 2022 -- February 2023

**SCHOOL OF INFOCOMM TECHNOLOGY**

Diploma in Information Technology

Diploma in Data Science

**Databases Assignment (40 % of DB Module)**

**8 Jan 2024 – 28 Jan 2024 (3 Weeks)**

|  |  |  |
| --- | --- | --- |
| Deliverables | Deadline | Submission |
| Softcopy | Sunday 28 Jan 2024, 23:59 pm | BrightSpace Assignment  Submission link |
| Hardcopy | Monday 29 Jan 2024, 10:00 am | Blk 31 Level 8 (Admin  Office),  Pigeon-holes (Databases) |

|  |  |  |  |
| --- | --- | --- | --- |
| DB Class Group | |  |  |
| Team Number | |  | Team Grade: |
| Tutor | |  |  |
| Members | Student No. | Student Name | Individual Grade |
| S10260423C | Cheong Zhi Xun |  |
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S/N Relation

1 Account (AccID, AccName, AccAddress, AccCtcNo, AccEmail, <CondoID>, <ApprovedBy>)

2 Announcement (AnnID, AnnText, AnnStartDate, AnnEndDate, <CondoMgmtID>)

3 Booking (BookingID, BookingDate, BookingStatus, <AccID>, <FacID, TimeSlotSN, SlotDate>)

4 BookSlot(<FacID, TimeSlotSN>, SlotDate, SlotStatus)

5 Condo (CondoID, CondoName, CondoAddress)

6 CondoMgmt (<CondoMgmtID>, ContactPerson, CtcPersonMobile)

7 CondoUsefulContact (<CondoID>, <UsefulCtcID>)

8 ContactCat (CtcCatID, CtcCatDesc)

9 Facility (FacID, FacName, Deposit, <CondoID>)

10 FacTimeSlot (<FacID>, TimeSlotSN, SlotDesc)

11 Feedback (FbkID, FbkDesc, FbkDateTime, FbkStatus, <ByAccID>, <FbkCatID>, <CondoMgmtID>)

12 FeedbkCat (FbkCatID, FbkCatDesc)

13 ItemCategory (ItemCatID, ItemCatDesc)

14 ItemPhoto (<ItemID>, Photo)

15 ItemRelated (<ItemID>, ItemDesc, ItemPrice, ItemStatus, SaleOrRent, <ItemCatID>)

16 Likes ( <AccID>, <MessageID>)

17 Message (MsgID, MsgText, MsgType, <PostedBy>, <ReplyTo>)

18 Owner (<OwnerID>, OwnStartDate, <CheckedBy>)

19 Staff (StaffID, StaffName, StaffContactNo, StaffDateJoined, StaffRole)

20 TempVehLabel (<VehLblAppID>, TempStartDate, TempExpiryDate)

21 Tenant (<TenantID>, ContractStartDate, ContractEndDate, <VerifiedBy>)

22 UsefulContact (UsefulCtcID, UsefulCtcName, UsefulCtcDesc, UsefulCtcPhone, <CtcCatID>)

23 Vehicle (VehicleNo, IUNo, Ownership, Make, Model)

24 VehicleLabel (VehLblAppID, VehLblStatus, VehLblNum, <VehicleNo>,<AppliedBy>, <IssuedBy>)

1. Account Relation: Stores the details of an account holder

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Description | Data Type | Constraint | Null Value |
| AccID | Unique account ID | smallint | Primary Key | No |
| AccName | The name of the account holder | varchar(50) |  | No |
| AccAddress | The home address of the account holder | varchar(150) |  | Yes |
| AccCtcNo | The contact number of the account holder | char(8) | unique | Yes |
| AccEmail | The email address of the account holder | varchar(50) | unique | No |
| CondoID | The condo that the account is related to | char(10) | Foreign Key à Condo (CondoID) | No |
| ApprovedBy | The staff ID of MyCondo staff who approves the account | smallint | Foreign Key à  Staff (StaffID) | Yes |

2. Announcement Relation: Stores the details of an announcement

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Description | Data Type | Constraint | Null Value |
| AnnID | Unique announcement ID | char(10) | Primary key | No |
| AnnText | The text message of the announcement | text |  | No |
| AnnStartDate | The date when the announcement starts | date | Default set to current date | No |
| AnnEndDate | The date when the announcement ends | date | AnnEndDate later than the AnnStartDate | No |
| CondoMgmID | The account ID of the condo management who put the announcement | smallint | Foreign key ->  CondoMgmt (CondoMgmtID) | No |

3. Booking: Stores the details of a facility booking

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Description | Data Type | Constraint | Null Value |
| BookingID | Unique booking ID | char(10) | Primary Key | No |
| BookingDate | The date when the booking is made | date |  | No |
| BookingStatus | The status of the booking (eg. Pending Payment, Confirmed, Cancelled) | char(2) | Values :  PP for “Pending Payment”,  CF for “Confirmed”,  CC for “Cancelled” | No |
| AccID | The account ID of the person who makes the booking | smallint | Foreign Key à Account (AccID) | No |
| FacID | The facility ID that is being booked | char(10) | Foreign Key à  BookSlot (FacID, TimeSlotSN, SlotSN) | No |
| TimeSlotSN | The facility's time slot number that is being booked | tinyint | Foreign Key à  BookSlot (FacID, TimeSlotSN, SlotSN) | No |
| SlotDate | The date when the facility time slot is being booked | date | Foreign Key à  BookSlot (FacID, TimeSlotSN, SlotSN) | No |

4. BookSlot: Stores the details of dates that facility time slot can be booked

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Description | Data Type | Constraint | Null Value |
| FacID | Unique facility ID that has the time slot | char(10) | Primary Key  Foreign Key à  FacTimeSlot  (FacID ,TimeSlotSN) | No |
| TimeSlotSN | The sequence number of a time slot (eg. 1, 2, …) | tinyint | Primary Key  Foreign Keyà  FacTimeSlot (FacID ,TimeSlotSN) | No |
| SlotDate | The date when a the facility time slot can be booked | date | Primary Key | No |
| SlotStatus | The status of the slor (Eg. Available, Booked, Maintenance) | char(1) | Values:  A for Available,  B for Booked,  M for Maintenance | No |

5. Condo: Stores the details of a condominium project

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Description | Data Type | Constraint | Null Value |
| CondoID | Unique condo ID | char(10) | Primary Key | No |
| CondoName | The name of the condo | varchar(50) |  | No |
| CondoAddress | The address of the condo | varchar(150) | unique | No |

6. CondoMgmt Relation: A subtype of Account: stores the additional account details for a condo management company

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Description | Data Type | Constraint | Null Value |
| CondoMgmtID | The account ID of the company (or its staff) that manages a condo | smallint | Primary key  Foreign Key à Account (AccID) | No |
| ContactPerson | The contact person of the condo management company | varchar(100) |  | No |
| CtcPersonMobile | The mobile number of the contact person | char(8) | unique | No |

7. CondoUsefulContact Relation: Stores the details of a condo's useful contact. Useful contacts usually are businesses near the condo

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Description | Data Type | Constraint | Null Value |
| CondoID | Unique ID of a condo | char(10) | Primary Key  Foreign Key à Condo (CondoID) | No |
| UsefulCtcID | Unique ID of a condo's useful contact | char(10) | Primary Key  Foreign Keyà  UsefulContact (UsefulCtcID) | No |

8. ContactCat Relation: Stores the details of a category that a useful contact can belong to

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Description | Data Type | Constraint | Null Value |
| CtcCatID | Unique category ID of a useful contact | char(10) | Primary key | No |
| CtcCatDesc | The description of a useful contact category | varchar(200) |  | No |

9. Facility Relation: Stores the details of a condo facility

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Description | Data Type | Constraint | Null Value |
| FacID | Unique facility ID | char(10) | Primary Key | No |
| FacName | The name or description of the facility (Eg. Tennis Court, BBQ Pit, Function Room) | varchar(100) |  | No |
| Deposit | The amount of deposit required to book the facility, if any | smallmoney |  | Yes |
| CondoID | The condo where the facility is located in | char(10) | Foreign Key à Condo (CondoID) | No |

10. FacTimeSlot Relation: Stores the details of a time slot that is scheduled by a facility for booking purpose

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Description | Data Type | Constraint | Null Value |
| FacID | Unique facility ID that has the time slot | char(10) | Primary Key  Foreign Keyà  Facility (FacID) | No |
| TimeSlotSN | The sequence number of a time slot (eg. 1, 2, …) | tinyint | Primary Key | No |
| SlotDesc | The time slot's description, eg. Morning, Afternoon, 9am-10am, 2pm-4pm | varchar(100) |  | No |

11. Feedback Relation: Stores the details of a time slot that is scheduled by a facility for booking purpose

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Description | Data Type | Constraint | Null Value |
| FbkID | Unique feedback ID | char(10) | Primary key | No |
| FbkDesc | The description/text of the feedback | text |  | No |
| FbkDateTime | The date and time when the feedback is sent | datetime | FbkDateTime not later than today | No |
| FbkStatus | The status of the feedback (eg. Sent, In Progress, Attended) | char(1) | Values:  S for Sent,  P for  In Progress,  A for  Attended | No |
| ByAccID | The account ID of the person who sends the feedback | smallint | Foreign key ->  Account  (AccID) | No |
| FbkCatID | The category ID that the feedback is grouped under | char(10) | Foreign key ->  FeedbkCat  (FbkCatID) | No |
| CondoMgmID | The account ID of the condo management staff who handles the feedback | smallint | Foreign key ->  CondoMgmt (CondoMgmtID) | Yes |

12. FeedbkCat Relation: Stores the details of a feedback categories

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Description | Data Type | Constraint | Null Value |
| FbkCatID | Unique feedback category ID | char(10) | Primary Key | No |
| FbkCatDesc | The description of a feedback category (eg. Cleanliness, Security, Plumbing, Building defects, etc) | varchar(50) |  | No |

13. ItemCategory Relation: Stores the details of a category of item posted by an account holder

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Description | Data Type | Constraint | Null Value |
| ItemCatID | Unique item category ID | char(10) | Primary Key | No |
| ItemCatDesc | The description of an item category (eg. Homeware, Fashion, Furniture, Electronics, etc) | varchar(50) |  | No |

14. ItemPhoto Relation: Stores the photos of an item

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Description | Data Type | Constraint | Null Value |
| ItemID | Unique item ID | char(10) | Primary Key  Foreign Keyà  Message (MsgID) | No |
| Photo | A photo of the item (note: don’t need to include actual photo, but just put text "photo 1", "photo 2",  etc) | varchar(20) | Primary Key | No |

15. ItemRelated Relation: A subtype of Message: stores the additional details which are related to an item

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Description | Data Type | Constraint | Null Value |
| ItemID | Unique message ID that is item related | char(10) | Primary Key  Foreign Keyà  Message (MsgID) | No |
| ItemDesc | The description of the item | varchar(150) | unique | No |
| ItemPrice | The price of the item | smallmoney |  | No |
| ItemStatus | The status of the item (eg. Available, Sold) | char(10) | Values: Available,  Sold | No |
| SaleOrRent | Is the item for sale or for rent? (eg. For Sale, For Rent) | char(4) | Values:  Sale,  Rent | No |
| ItemCatID | The category ID that the item belongs to | char(10) | Foreign Keyà  ItemCategory (ItemCatID) | Yes |

16. Likes Relation: Stores the details of who likes which message posted by others

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Description | Data Type | Constraint | Null Value |
| AccID | Unique account ID | smallint | Primary Key  Foreign Keyà  Account (AccID) | No |
| MessageID | The message ID that is liked by this account holder | char(10) | Primary Key  Foreign Keyà  Message (MsgID) | No |

17. Message Relation: Stores the details of a message posted by an account holder

Stores the details of a message posted by an account holder

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Description | Data Type | Constraint | Null Value |
| MsgID | Unique message ID | char(10) | Primary Key | No |
| MsgText | The message text | text |  | No |
| MsgType | The type of a message (eg. Chatterbox, Garage Sale, Find a Buddy). Item related message is Garage Sale | char(1) | Values:  C for Chatterbox,  G for Garage Sale,  F for Find a Buddy | No |
| PostedBy | The account ID of the person who posts this message | smallint | Foreign Keyà  Account (AccID) | No |
| ReplyTo | The message ID that is being replied to by this message (it is NULL if this message is not a  reply/response) | char(10) | Foreign Key ->  Message (MsgID) | yes |

18. Owner Relation

A subtype of Account: stores the additional account details of a condo unit owner

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Description | Data Type | Constraint | Null Value |
| OwnerID | Unique account ID of a condo unit owner | smallint | Primary Key  Foreign Keyà  Account (AccID) | No |
| OwnStartDate | The date when this owner starts owning the condo unit | date |  | No |
| CheckedBy | The account ID of the condo management staff who verifies the validity of ownership | smallint | Foreign Keyà  CondoMgmt (CondoMgmtID) | Yes |

19. Staff Relation

Stores the details of a staff who manages the MyCondo system

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Description | Data Type | Constraint | Null Value |
| StaffID | Unique staff ID | smallint | Primary Key | No |
| StaffName | The name of this MyCondo staff | varchar(50) |  | No |
| StaffContactNo | The contact number of the MyCondo staff | char(8) | unique | Yes |
| StaffDateJoined | The start date when this staff joined MyCondo | date | Default set to the current date | No |
| StaffRole | The role of this MyCondo staff (eg. Admin, Customer Service, Tech Support) | char(1) | Values:  A for Admin,  C for Customer Service,  T for Tech Support | No |

20. TempVehLabel Relation

A subtype of VehicleLabel: stores the additional details for a temporary vehicle label application

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Description | Data Type | Constraint | Null Value |
| VehLblAppID | Unique application ID for a temporary vehicle label | char(10) | Primary Key  Foreign Keyà  VehicleLabel (VehLblAppID) | No |
| TempStartDate | The start date of the parking permit | date |  | No |
| TempExpiryDate | The expiry date of the parking permit | date | TempStartDate must be less than TempExpiryDate | No |

21. Tenant Relation

A subtype of Account: stores the additional details of a tenant

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Description | Data Type | Constraint | Null Value |
| TenantID | Unique account ID of a tenant | smallint | Primary Key  Foreign Keyà  Account (AccID) | No |
| ContractStartDate | The start date of the tenancy contract | date | Default set to current date | No |
| ContractEndDate | The end date of the tenancy contract | date | ContractEndDate must be later than ContractStartDate | No |
| VerifiedBy | The account ID of the condo management staff who verifies the validity of tenancy | smallint | Foreign Keyà  CondoMgmt (CondoMgmtID) | Yes |

22. UsefulContact Relation

Stores the details of a useful contact of a condo. Useful contacts usually are businesses near the condo

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Description | Data Type | Constraint | Null Value |
| UsefulCtcID | Unique useful contact ID | char(10) | Primary Key | No |
| UsefulCtcName | The name of a useful contact | varchar(50) |  | No |
| UsefulCtcDesc | The description of a useful contact | varchar(150) |  | Yes |
| UsefulCtcPhone | The phone number of a useful contact | char(8) | unique | No |
| CtcCatID | The contact category ID that this useful contact belongs to | char(10) | Foreign Key à  ContactCat (CtcCatID) | Yes |

23. Vehicle Relation

Stores the details of a vehicle

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Description | Data Type | Constraint | Null Value |
| VehicleNo | Unique vehicle number | char(10) | Primary Key | No |
| IUNo | The IU number of the vehicle | varchar(30) | unique | No |
| Ownership | The ownership of the vehicle (eg. Own, Rented, Company Car, Others) | char(2) | Values:  OW for Own,  RT for Rented,  CC for Company Car,  OT for Others | No |
| Make | The make of the vehicle (eg. Toyota, Honda, Proton) | varchar(20) |  | No |
| Model | The model of the vehicle (eg. Crown, Altis, Saga) | varchar(20) |  | No |

24. VehicleLabel Relation

Stores the details of a vehicle label application

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Description | Data Type | Constraint | Null Value |
| VehLblAppID | Unique application ID | char(10) | Primary Key | No |
| VehLblStatus | The status of the vehicle label application (eg. Pending, Approved, Rejected) | char(1) | Values:  P for Pending,  A for Approved,  R for Rejected | No |
| VehLblNum | The vehicle label number assigned by the condo management | char(10) | unqiue | No |
| VehicleNo | The vehicle number which the label is applied for | char(10) | Foreign Key à Vehicle (VehicleNo) | No |
| AppliedBy | The account ID of the person who makes the application | smallint | Foreign Key à Account (AccID) | No |
| IssuedBy | The account ID of the condo management staff who issues the vehicle label | smallint | Foreign Key à CondoMgmt (CondoMgmt) | Yes |

Order of Creation