

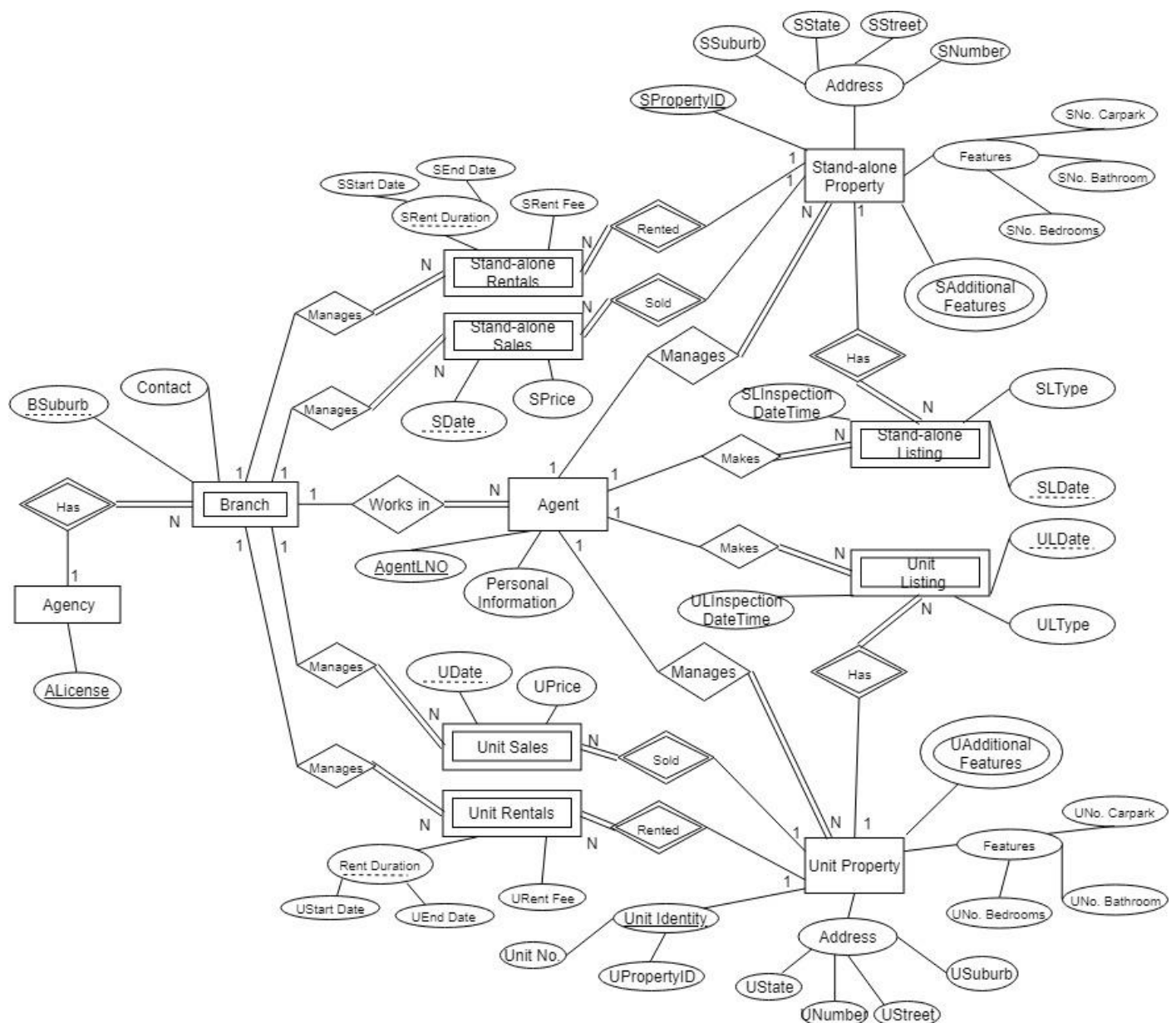
Assignment Part 1 Template

Group Member 1: Youngsu Choi, 45182822

Group Member 2: Emerson Wu, 45033308

Note: Please edit the name and student ID number to reflect your identity and do not modify the design and layout of the cover page (font, font size, spacing, etc.). Also, do not change the page layout in the given assignment template.

YOUR ER DIAGRAM MUST FIT ON THIS PAGE



Assumption	Reason	Assumption	Reason
Although UoD says "Real estate agencies are responsible for managing the sales and rentals of properties". Assuming branches manage properties on behalf of the agency.	No feasible larger agency entity to manage properties for all home. So they most likely delegate the work to the branches.	An agent's personal information can be stored within one attribute as a small paragraph of text description	Personal information for the websites are in paragraph form
One property is only managed by one agent	Although in real life one property can have more than one agent. This is not common practice because agents don't put in that much effort if they know they might not get paid at the end.	Address are defined with number, street, suburb, and state.	This is enough to identify a property
A property can be sold, rented and listed multiple times	As in the UoD it states there is "sale and rental history". This implies there might be more than one listing per property	InspectionDateTime is one attribute.	Information needed is the date and time the location can be found in from the address of the property
The ER is mirrored because because if standalone properties (no unit number) was combined with properties with multiple units as one entity, standalone property will have null units. Resulting in a violation of the entity integrity constraint.	If standalone properties (no unit number) was combined with properties with multiple units as one entity, standalone property will have null units. Resulting in a violation of the entity integrity constraint.	Other features in the UoD is just a list (multivalued attribute) of features additional to the attributed features (No. Bedrooms, Bathrooms and Carports)	The number of each feature is not stored because these features should be one off (e.g. pool, balcony).
Address are defined with number, street, suburb, and state.	This is enough to identify a property	Stand-alone properties/ multiple unit buildings have propertyID	In real life buildings are usually identified by a propertyID

YOUR FINAL MAPPING MUST FIT ON THIS PAGE

Stand-aloneProperty[SPropertyID, SState, SStreet, SNumber, SSuburb, SNo.Carpark, SNo.Bathroom, SNo.Bedroom, **AgentLNO**]

SAdditionalFeatures[SPropertyID, SAdditionalFeatures]

UnitProperty[UPropertyID, Unit No., UState, UStreet, UNumber, USuburb, UNo. Carpark, UNo.Bathroom, UNo.Bedroom, **AgentLNO**]

UAdditionalFeatures[UPropertyID, Unit No., UAdditionalFeatures]

Agency[ALicense]

Branch[ALicense, BSuburb, Contact]

Agent[AgentLNO, ALicense, BSuburb, Personal Information]

Stand-aloneListing[SPropertyID, SLDate, **AgentLNO**, SLType, SLInspection DateTime]

Stand-aloneRentals[SPropertyID, SStart Date, SEnd Date, **ALicense**, **BSuburb**, SRent Fee]

Stand-aloneSales[SPropertyID, SDate, **ALicense**, **BSuburb**, SPrice]

UnitListing[UPropertyID, Unit No., ULDate, **AgentLNO**, ULType, ULInspection DateTime]

UnitRentals[UPropertyID, Unit No., UStart Date, UEnd Date, **ALicense**, **BSuburb**, URent Fee]

UnitSales[UPropertyID, Unit No., UDate, **ALicense**, **BSuburb**, UPrice]

Stand-aloneProperty.AgentLNO references Agent.AgentLNO.

Stand-aloneFeatures.SPropertyID references Stand-aloneProperty.SPropertyID

UnitProperty.AgentLNO references Agent.AgentLNO

UAdditionalFeatures.{UPropertyID, Unit No.} references Unit.{UPropertyID, Unit No.}

Branch.ALICENSE references Agency.ALICENSE

Agent.{ALICENSE, BSuburb} references Branch.{ALICENSE, BSuburb}

Stand-aloneListing.SPropertyID references Stand-alone.SPropertyID

Stand-aloneListing.AgentLNO references Agent.AgentLNO

Stand-aloneRentals.SPropertyID references Stand-aloneProperty.SPropertyID

Stand-aloneRentals.{ALICENSE, BSuburb} references Branch.{ALICENSE, BSuburb}

Stand-aloneSales.SPropertyID references Stand-aloneProperty.SPropertyID

Stand-aloneSales.{ALICENSE, BSuburb} references Branch. {ALICENSE, BSuburb}

UnitListing.{UPropertyID, Unit No.} references UnitProperty.{UPropertyID, Unit No.}

UnitListing.AgentLNO references Agent.AgentLNO

UnitRentals.{UPropertyID, Unit No.} references UnitProperty.{UPropertyID, Unit No.}

UnitRentals.{ALICENSE, BSuburb} references Branch.{ALICENSE, BSuburb}

UnitSales.{UPropertyID, Unit No.} references UnitProperty.{UPropertyID, Unit No.}

UnitSales.{ALICENSE, BSuburb} references Branch.{ALICENSE, BSuburb}

YOUR FUNCTIONAL DEPENDENCIES MUST FIT ON THIS PAGE

Stand-aloneProperty[SPropertyID, SState, SStreet, SNumber, SSuburb, SNo.Carpark, SNo.Bathroom, SNo.Bedroom, **AgentLNO**]

SPropertyID -> SState, SStreet, SNumber, SSuburb, SNo.Carpark, SNo.Bathroom, SNo.Bedroom, AgentLNO

SSuburb -> SState

SAdditionalFeatures[**SPropertyID**, SAdditionalFeatures]

SPropertyID, SAdditionalFeatures -> SPropertyID, SAdditionalFeatures

UnitProperty[UPropertyID, Unit No., UState, UStreet, UNumber, USuburb, UNo.Carpark, UNo.Bathroom, UNo.Bedroom, **AgentLNO**]

UPropertyID -> UState, UStreet, UNumber, USuburb, UNo.Carpark, UNo. Bathroom, UNo.Bedroom, AgentLNO

USuburb -> UState

UAdditionalFeatures[**UPropertyID**, **Unit No.**, UAdditionalFeatures]

UPropertyID, UnitNo., UAdditionalFeatures -> UPropertyID, Unit No., UAdditionalFeatures

Agency[ALicense]

ALicense -> ALicense

Branch[**ALicense**, BSuburb, Contact]

ALicense, BSuburb -> Contact

Agent[AgentLNO, **ALicense**, **BSuburb**, Personal Information]

AgentLNO -> ALicense, BSuburb, Personal Information

Stand-aloneListing[**SPropertyID**, SLDate, **AgentLNO**, SLType, SLInspection DateTime]

SPropertyID, SLDate -> AgentLNO, SLType, SLInspection DateTime

Stand-aloneRentals[**SPropertyID**, SStart Date, SEnd Date, **ALicense**, **BSuburb**, SRent Fee]

SPropertyID, SStart_Date, SEnd_Date -> ALicense, BSuburb, SRent Fee

Stand-aloneSales[**SPropertyID**, SDate, **ALicense**, **BSuburb**, SPrice]

SPropertyID, SDate -> ALicense, BSuburb, SPrice

UnitListing[**UPropertyID**, **Unit No.**, ULDate, **AgentLNO**, ULType, ULInspection DateTime]

UPropertyID, Unit No., ULDate -> AgentLNO, ULType, ULInspection DateTime

UnitRentals[**UPropertyID**, **Unit No.**, UStart Date, UEnd Date, **ALicense**, **BSuburb**, URent Fee]

UPropertyID, Unit No., UStart_Date, UEnd_Date -> ALicense, BSuburb, URent Fee

UnitSales[**UPropertyID**, **Unit No.**, UDate, **ALicense**, **BSuburb**, UPrice]

UPropertyID, Unit No., UDate -> ALicense, BSuburb, UPrice

YOUR NORMALISATION MUST FIT ON THIS PAGE

Stand-aloneProperty[SPropertyID, SState, SStreet, SNumber, SSuburb, SNo.Carpark, SNo.Bathroom, SNo.Bedroom, **AgentLNO**]

SPropertyID -> SState, SStreet, SNumber, SSuburb, SNo.Carpark, SNo.Bathroom, SNo.Bedroom, AgentLNO

SSuburb -> SState

SSuburb[SSuburb, SState]

Stand-aloneProperty[SPropertyID, SStreet, SNumber, SSuburb, SNo.Carpark, SNo.Bathroom, SNo.Bedroom, **AgentLNO**]

There are no partial or transitive dependencies in Stand-aloneProperty anymore. There are also no BCNF violations, and hence Stand-aloneProperty is now in BCNF.

SAdditionalFeatures[SPropertyID, SAdditionalFeatures]

SPropertyID, SAdditionalFeatures -> SPropertyID, SAdditionalFeatures

There are no partial or transitive dependencies in SAdditionalFeatures. There are also no BCNF violations, and hence SAdditionalFeatures is already in BCNF.

UnitProperty[UPropertyID, Unit No., UState, UStreet, UNumber, USuburb, UNo.Carpark, UNo.Bathroom, UNo.Bedroom, **AgentLNO**]

UPropertyID -> UState, UStreet, UNumber, USuburb, UNo.Carpark, UNo.Bathroom, UNo.Bedroom, AgentLNO

USuburb -> UState

USuburb[USuburb, UState]

UnitProperty[UPropertyID, Unit No., UStreet, UNumber, USuburb, UNo.Carpark, UNo.Bathroom, UNo.Bedroom, **AgentLNO**]

There are no partial or transitive dependencies in UnitProperty anymore. There are also no BCNF violations, and hence UnitProperty is now in BCNF.

UAdditionalFeatures[UPropertyID, Unit No., UAdditionalFeatures]

UPropertyID, UnitNo., UAdditionalFeatures -> UPropertyID, Unit No., UAdditionalFeatures

There are no partial or transitive dependencies in UAdditionalFeatures. There are also no BCNF violations, and hence UAdditionalFeatures is already in BCNF.

Agency[ALicense]

ALicense -> ALicense

There are no partial or transitive dependencies in Agency. There are also no BCNF violations, and hence Agency is already in BCNF.

Branch[ALicense, BSuburb, Contact]

ALicense, BSuburb -> Contact

There are no partial or transitive dependencies in Branch. There are also no BCNF violations, and hence Branch is already in BCNF.

Agent[AgentLNO, **ALicense**, BSuburb, Personal Information]

AgentLNO -> ALicense, BSuburb, Personal Information

There are no partial or transitive dependencies in Agent. There are also no BCNF violations, and hence Agent is already in BCNF.

Stand-aloneListing[SPropertyID, SLDate, **AgentLNO**, SLType, SLInspection DateTime]

SPropertyID, SLDate -> AgentLNO, SLType, SLInspection DateTime

There are no partial or transitive dependencies in Stand-aloneListing. There are also no BCNF violations, and hence Stand-aloneListing is already in BCNF.

Stand-aloneRentals[SPropertyID, SStart Date, SEnd Date, **ALicense**, BSuburb, SRent Fee]

SPropertyID, SStart Date, SEnd Date -> ALicense, BSuburb, SRent Fee

There are no partial or transitive dependencies in Stand-aloneRentals. There are also no BCNF violations, and hence Stand-aloneRentals is already in BCNF.

Stand-aloneSales[SPropertyID, SDate, **ALicense**, BSuburb, SPrice]

SPropertyID, SDate -> ALicense, BSuburb, SPrice

There are no partial or transitive dependencies in Stand-aloneSales. There are also no BCNF violations, and hence Stand-aloneSales is already in BCNF.

UnitListing[UPropertyID, Unit No., ULDate, **AgentLNO**, ULType, ULInspection DateTime]

UPropertyID, Unit No., ULDate -> AgentLNO, ULType, ULInspection DateTime

There are no partial or transitive dependencies in UnitListing. There are also no BCNF violations, and hence UnitListing is already in BCNF.

UnitRentals[UPropertyID, Unit No., UStart Date, UEnd Date, **ALicense**, BSuburb, URent Fee]

UPropertyID, Unit No., UStart Date, UEnd Date -> ALicense, BSuburb, URent Fee

There are no partial or transitive dependencies in UnitRentals. There are also no BCNF violations, and hence UnitRentals is already in BCNF.

UnitSales[UPropertyID, Unit No., UDate, **ALicense**, BSuburb, UPrice]

UPropertyID, Unit No., UDate -> ALicense, BSuburb, UPrice

There are no partial or transitive dependencies in UnitSales. There are also no BCNF violations, and hence UnitSales is already in BCNF.