

## COMP1350 2023 – ASSIGNMENT ONE

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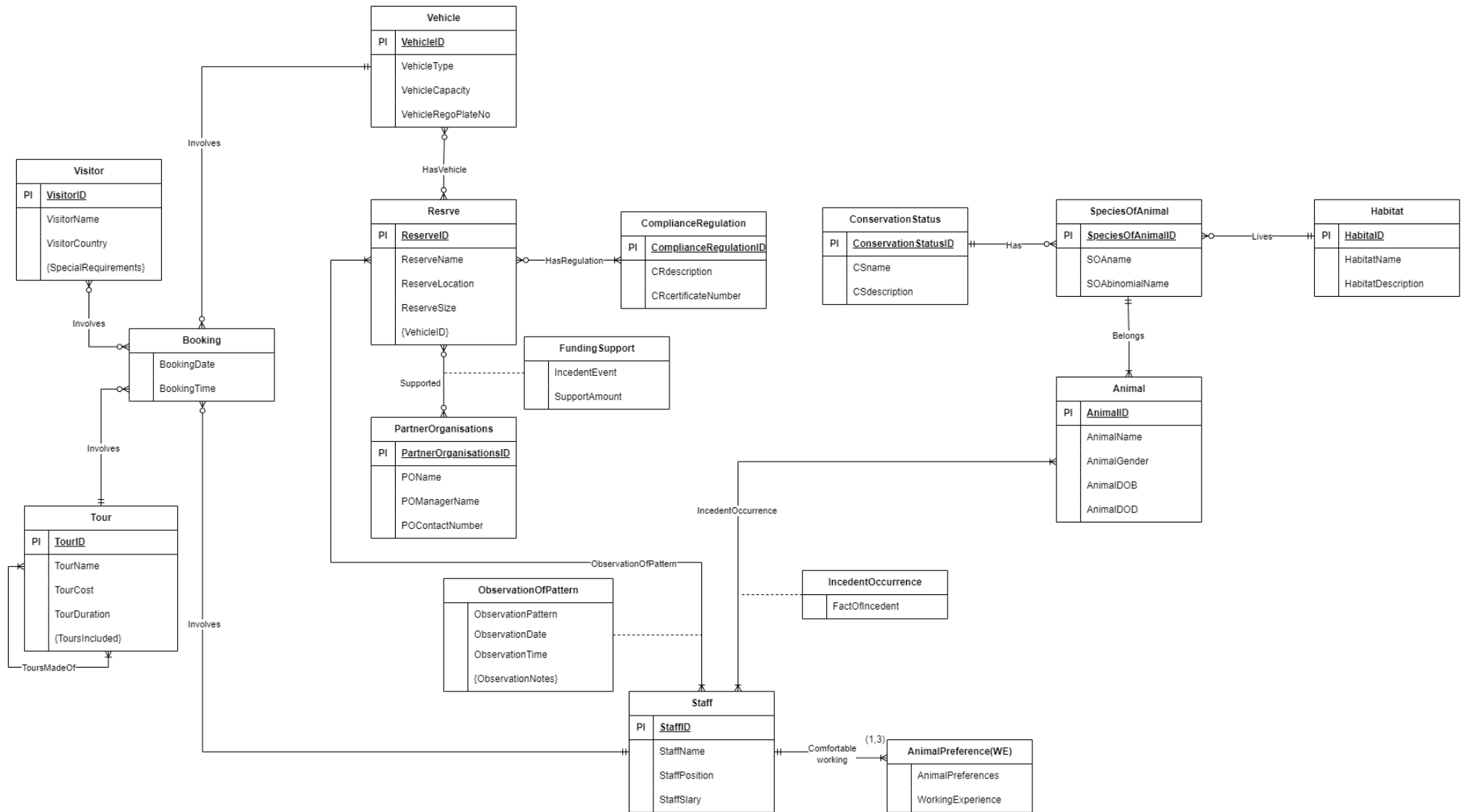
**Tutor's Name:**

**Class Number**

### Task 1: ER Diagram

Assumptions, if any:

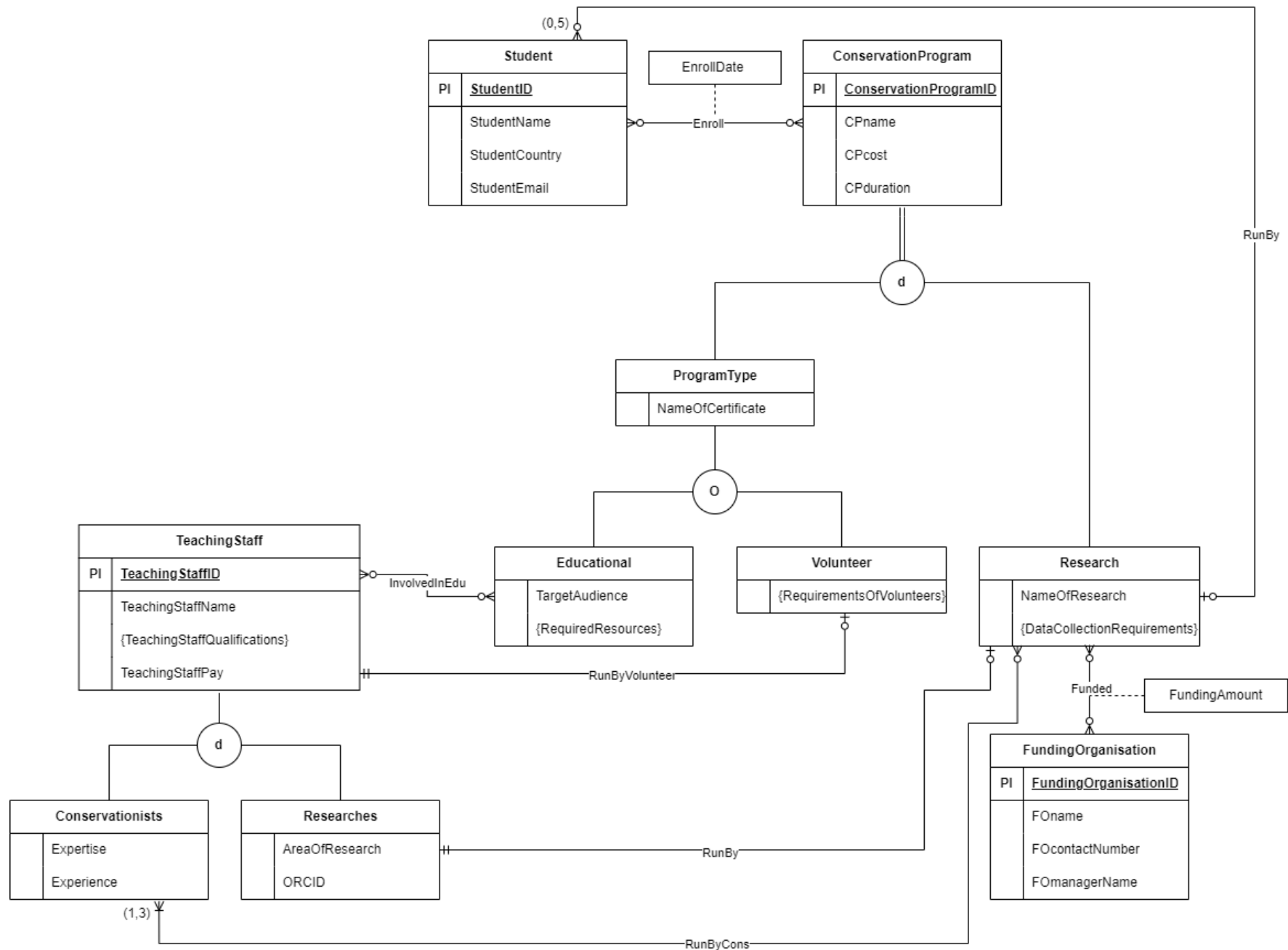
- Reserve must have at least one staff to record an observation.
- Staff must look after at least one reserve to notice behaviour/pattern.
- Staff must look after at least one animal to notice an incident
- The animal must have at least one staff for the incident to be recorded.
- Conservation status may be applied to several Species
- One specie must have only one conservation status (as I think) and only one habitat (from question)



## Task 2: EER Diagram

Assumptions, if any:

- If the student exclusively enrolled to work on the research, he must be enrolled just in one research program.



### Task 3: Logical Transformation- ER

#### Step 1:

|                      |   |
|----------------------|---|
| Vehicle              | ( <u>VehicleID(pk)</u> , VehicleType, VehicleCapacity, VehicleRegoPlateNo)    |
| Reserve              | ( <u>ReserveID(pk)</u> , ReserveName, ReserveLocation, ReserveSize)           |
| ComplianceRegulation | ( <u>ComplianceRegulationID(pk)</u> , CRdescription, CRcertificateNumber)     |
| PartnerOrganisations | ( <u>PartnerOrganisationsID(pk)</u> , POName, POManagerName, POContactNumber) |
| Staff                | ( <u>StaffID(pk)</u> , StaffName, StaffPosition, StaffSlary)                  |
| Animal               | ( <u>AnimalID(pk)</u> , AnimalName, AnimalGender, AnimalDOB, AnimalDOD)       |
| SpeciesOfAnimal      | ( <u>SpeciesOfAnimalID(pk)</u> , SOAname, SOAbinomialName)                    |
| ConservationStatus   | ( <u>ConservationStatusID(pk)</u> , CSname, CSdescription)                    |
| Habitat              | ( <u>HabitalID(pk)</u> , HabitatName, HabitatDescription)                     |
| Tour                 | ( <u>TourID(pk)</u> , TourName, TourCost, TourDuration)                       |
| Visitor              | ( <u>VisitorID(pk)</u> , VisitorName, VisitorCountry)                         |

#### Step 2:

AnimalPreference (StaffID(pk, fk), AnimalPreferences(pk), WorkingExperience)

**Step 3:**

None

**Step 4:**

SpeciesOfAnimal (SpeciesOfAnimalID(pk), SOAname, SOAbinomialName, ConservationStatusID(fk), HabitaID(fk))

Animal (AnimalID(pk), AnimalName, AnimalGender, AnimalDOB, AnimalDOD, SpeciesOfAnimalID(fk))

**Step 5:**

HasVehicle (VehicleID(pk, fk), ReserveID(pk, fk))

HasRegulation (ReserveID(pk, fk), ComplianceRegulationID(pk, fk))

Supported (ReserveID(pk, fk), PartnerOrganisationsID(pk, fk), IncedentEvent, SupportAmount)

ObservationOfPattern (ReserveID(pk, fk), StaffID(pk, fk), ObservationPattern, ObservationDate, ObservationTime)

IncedentOccurrence (StaffID(pk, fk), AnimalID(pk, fk), FactOfIncedent)

ToursMadeOf (TourID(pk, fk), CompositeTour(pk, fk))

**Step 6:**

VehicleID (ReserveID(pk, fk), VehicleID(pk))

ObservationNotes (ReserveID(pk, fk), StaffID(pk, fk), Notes(pk))

ToursIncluded (TourID(pk, fk), ToursInTour(pk))

SpecialRequirements (VisitorID(pk, fk), SpecialRequirement(fk))

**Step 7:**

Booking (TourID(pk, fk), VisitorID(pk, fk), VehicleID(pk, fk), StaffID(pk, fk), BookingDate, BookingTime)

**Final Tables:**

Vehicle (VehicleID(pk), VehicleType, VehicleCapacity, VehicleRegoPlateNo)

Reserve (ReserveID(pk), ReserveName, ReserveLocation, ReserveSize)

ComplianceRegulation (ComplianceRegulationID(pk), CRdescription, CRcertificateNumber)

PartnerOrganisations (PartnerOrganisationsID(pk), POName, POManagerName, POContactNumber)

Staff (StaffID(pk), StaffName, StaffPosition, StaffSlary)

Animal (AnimalID(pk), AnimalName, AnimalGender, AnimalDOB, AnimalDOD, SpeciesOfAnimalID(fk))

SpeciesOfAnimal (SpeciesOfAnimalID(pk), SOAname, SOAbinomialName, ConservationStatusID(fk), HabitalID(fk))

ConservationStatus (ConservationStatusID(pk), CSname, CSdescription)

Habitat (HabitalID(pk), HabitatName, HabitatDescription)

Tour (TourID(pk), TourName, TourCost, TourDuration)

Visitor (VisitorID(pk), VisitorName, VisitorCountry)

AnimalPreference (StaffID(pk, fk), AnimalPreferences(pk), WorkingExperience)

HasVehicle (VehicleID(pk, fk), ReserveID(pk, fk))

HasRegulation (ReserveID(pk, fk), ComplianceRegulationID(pk, fk))

Supported (ReserveID(pk, fk), PartnerOrganisationsID(pk, fk), IncedentEvent, SupportAmount)

ObservationOfPattern (ReserveID(pk, fk), StaffID(pk,fk), ObservationPattern, ObservationDate, ObservationTime)

IncedentOccurrence (StaffID(pk, fk), AnimalID(pk, fk), FactOfIncedent)



ToursMadeOf (TourID(pk, fk), CompositeTour(pk, fk))

VehicleID (ReserveID(pk, fk), VehicleID(pk))

ObservationNotes (ReserveID(pk, fk), StaffID(pk,fk), Notes(pk))

ToursIncluded (TourID(pk, fk), ToursInTour(pk))

SpecialRequirements (VisitorID(pk, fk), SpecialRequirement(fk))

Booking (TourID(pk, fk), VisitorID(pk, fk), VehicleID(pk, fk), StaffID(pk, fk), BookingDate, BookingTime)

#### Task 4: Logical Transformation- EER

##### **Step 1:**

Student (StudentID(pk), StudentName, StudentCountry, StudentEmail)

ConservationProgram (ConservationProgramID(pk), CPname, CPcost, CPduration)

FundingOrganisation (FundingOrganisationID(pk), FOname, FOcontactNumber, FOfanagerName)

TeachingStaff (TeachingStaffId(pk), TeachingStaffName, TeachingStaffPay)

##### **Step 2:**

None

##### **Step 3:**

None

##### **Step 4:**

None

**Step 5:**

Enroll(StudentID(pk, fk), ConservationProgramID(pk, fk), EnrollDate)

**Step 6:**

TeachingStaffQualifications(TeachingStaffID(pk, fk), Qualification(pk))

**Step 7:**

None

**Step 8:**

8B:

ProgramType(ConservationProgramID(pk), CPname, CPcost, CPduration, NameOfCertificate)

Research(ConservationProgramID(pk), CPname, CPcost, CPduration, NameOfResearch)

8A:

Conservationists(TeachingStaffID(pk, fk), Expertise, Experience)

Researches(TeachingStaffID(pk, fk), AreaOfResearch, ORCID)

8A:

Educational(ConservationProgramID(pk, fk), TargetAudience)

Volunteer(ConservationProgramID(pk, fk))

**Repeat steps:**

**Step 2:**

None

**Step 3:**

Research(ConservationProgramID(pk), CPname, CPcost, CPduration, NameOfResearch, RunByResearches(fk))

Volunteer(ConservationProgramID(pk, fk), RunByVolunteer(fk))

**Step 4:**

Student(StudentID(pk), StudentName, StudentCountry, StudentEmail, ConservationProgramID(fk))

**Step 5:**

Enroll(StudentID(pk, fk), ConservationProgramID(pk, fk), EnrollDate)

Funded(FundingOrganisationID(pk, fk), ConservationProgramID(pk, fk), FundingAmount)

RunByCons(TeachingStaffID(pk, fk), ConservationProgramID(pk, fk))

InvolvedInEdu(TeachingStaffID(pk, fk), ConservationProgramID(pk, fk))

**Step 6:**

RequiredResources (ConservationProgramID(pk, fk), Resources(fk))

RequirementsOfVolunteers (ConservationProgramID(pk, fk), Requirements(fk))

DataCollectionRequirements (ConservationProgramID(pk, fk), DC Requirements(fk))

**Step 7:**

None

**Final tables:**

Student(StudentID(pk), StudentName, StudentCountry, StudentEmail, ConservationProgramID(fk))

ConservationProgram (ConservationProgramID(pk), CPname, CPcost, CPduration)

FundingOrganisation (FundingOrganisationID(pk), FOname, FOcontactNumber, FOnanagerName)

TeachingStaff (TeachingStaffId(pk), TeachingStaffName, TeachingStaffPay)

TeachingStaffQualifications(TeachingStaffID(pk, fk), Qualification(pk))

ProgramType(ConservationProgramID(pk), CPname, CPcost, CPduration, NameOfCertificate)

Research(ConservationProgramID(pk), CPname, CPcost, CPduration, NameOfResearch, RunByResearches(fk))

Conservationists(TeachingStaffID(pk, fk), Expertise, Experience)

Researches(TeachingStaffID(pk, fk), AreaOfResearch, ORCID)

Educational(ConservationProgramID(pk, fk), TargetAudience)

Volunteer(ConservationProgramID(pk,fk), RunByVolunteer(fk))

Enroll(StudentID(pk, fk), ConservationProgramID(pk, fk), EnrollDate)

Funded(FundingOrganisationID(pk, fk), ConservationProgramID(pk, fk), FundingAmount)

RunByCons(TeachingStaffID(pk, fk), ConservationProgramID(pk, fk))

InvolvedInEdu(TeachingStaffID(pk, fk), ConservationProgramID(pk, fk))

RequiredResources (ConservationProgramID(pk, fk), Resources(fk))

RequirementsOfVolunteers (ConservationProgramID(pk,fk), Requirements(fk))

DataCollectionRequirements (ConservationProgramID(pk, fk), DC Requirements(fk))