

**UNIVERSITY OF
WESTMINSTER**



**INFORMATICS
INSTITUTE OF
TECHNOLOGY**

INFORMATICS INSTITUTE OF TECHNOLOGY

In Collaboration with

School of Computing

UNIVERSITY OF WESTMINSTER (UOW)

BEng (Hons) in Software Engineering

**5COSC020W: DATABASE SYSTEMS
COURSEWORK (2021/2022)**

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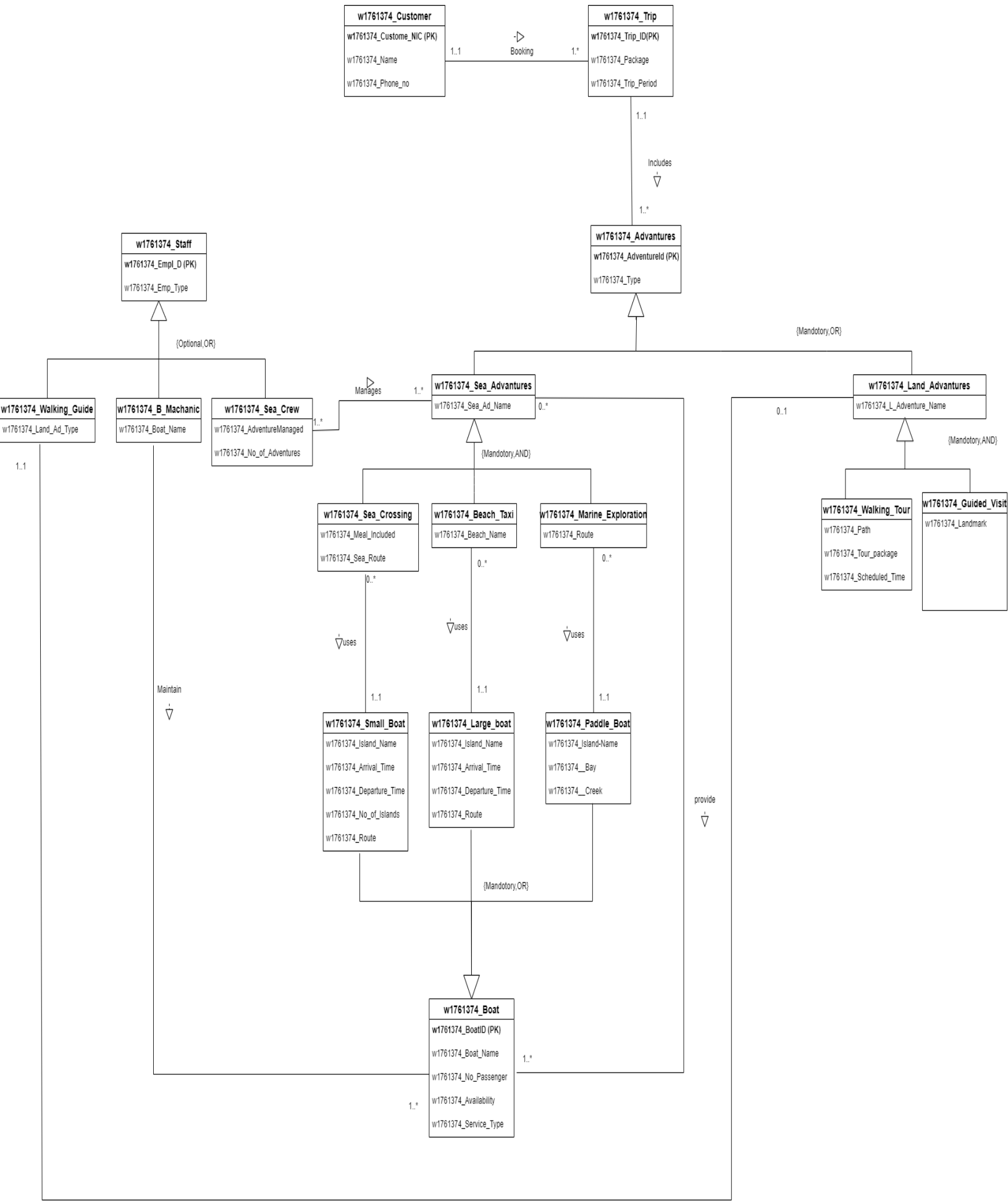
Date of submission: 08 NOVEMBER 2021 at 13:00:00 – Part A

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Create a data dictionary to document how you identified the entities for ArchipelagoCrazy. To achieve this, fill in the 2 tables below to summarise and briefly explain the meaning of each entity.

Entity Name	Brief Description
w1761374_Customer	Person who booked a trip
w1761374_Trip	Main details of the trip booked by a person
w1761374_Adventure	The Two type of Adventures offered by the company
w1761374_Sea_Adventure	Sea Adventures details
w1761374_Land_Adventure	Land Adventures details
w1761374_Sea_Crossing	Details regarding sea crossing adventures. This falls under sea adventures
w1761374_Beach_Taxi	Details regarding taxi services between islands. This falls under sea adventures.
w1761374_Marine_Exploration	Details regarding marine exploration. This falls under sea adventures.
w1761374_Walking_Tour	Details regarding walking tours. This falls under Land adventures.
w1761374_Guided_Visit	Details regarding guided visits of the main landmarks located on the islands. This falls under Land adventures.
w1761374_Boat	Details regarding the boats provided by the company
w1761374_Large_boat	Details regarding the large motorboats provided by the company
w1761374_Small_boat	Details regarding the small motorboats provided by the company
w1761374_Paddle_Boat	Details regarding the paddle boats that are provided by the company
w1761374_Staff	Details regarding the employees working in ArchipelagoCrazy
w1761374_SeaCrew	Details regarding the staff who manage and helps on the sea adventures
w1761374_Walking_Guide	Details regarding guides who show visitors around landmarks in the islands.
w1761374_B_Mechanic	Details regarding the staff who maintain and repair the boats.

General Entity	Specialized Entity	Brief Description
w1761374_Adventure	w1761374_Sea_Adventure	Details of the Sea Adventures
w1761374_Adventure	w1761374_Land_Adventure	Details of the Land Adventures
w1761374_Sea_Adventure	w1761374_Sea_Crossing	Details of the sea crossing adventures. This falls under Sea adventures.
w1761374_Sea_Adventure	w1761374_Beach_Taxi	Details of the taxi service offered between Islands. This falls under Sea adventures.
w1761374_Sea_Adventure	w1761374_Marine_Exploration	Details of the marine exploration. This falls under Sea adventures.
w1761374_Land_Adventure	w1761374_Walking_Tour	Details of the walking tours. This falls under Land adventures.
w1761374_Land_Adventure	w1761374_Guided_Visit	Details regarding guided visits of the main landmarks located on the islands. This falls under Land adventures.
w1761374_Staff	w1761374_Sea_Crew	Details regarding the staff who manage and helps on the sea adventures
w1761374_Staff	w1761374_Walking_Guide	Details regarding guides who show visitors around landmarks in the islands.
w1761374_Staff	w1761374_Boat_Mechanic	Details regarding the staff who maintain and repair the boats.

Create a data dictionary to document how you identified the relationships and multiplicities for ArchipelagoCrazy. To achieve this, fill in the table below to summarise and justify the multiplicities for each relationship.

Entity Name	Multiplicity	Relationship	Multiplicity	Entity Name	Brief justification for multiplicity
w1761374_Customer	1..1	Booking	1..*	w1761374_Trip	Customer book Trips
					One Customer can Book Many Trips
					Trip should Always have a customer
					One trip can only booked by one Customer
w1761374_Trip	1..1	includes	1..*	w1761374_Adventure	Trips include adventures.

					A trip can be a land or sea adventure
					Trip can have one or More adventures.
					An adventure belongs to one trip.
w1761374_Sea_Adventure	1..*	provide	0..*	w1761374_Boat	A SeaAdventure can provide one or many boats.
					Sea Adventure has to provide at least one boat
					A boat can be provide for many sea adventures.
					A boat is idle when not in provide by a sea adventure.
w1761374_Sea_Crossing	1..1	uses	0..*	w1761374_Large_boat	Each sea crossing should have one large boat.
					Only one boat can be used in one sea adventure.
					One LargeMotorboat can be used for many SeaCrossing
					LargeMotorboat is idle when no crossings.
w1761374_Beach_Taxi	1..1	uses	0..*	w1761374_Small_Boat	Each taxi service should have one boat.
					Only one boat can be used in one beach taxi service.
					One SmallMotorboat can be used for many BeachTaxiServices
					SmallMotorboat can be not used when no taxi service required.
w1761374_MarineExploration	1..1	uses	0..*	w1761374_Paddle_Boat	Each marine exploration should have one boat.

					Only one boat can be used in one MarineExploration.
					One PaddleBoat can be used for many MarineExploration
					PaddleBoat can be not used when no marine exploration.
w1761374_Sea_Crew	1..*	manages	1..*	w1761374_Sea_Adventure	SeaCrewMember can manage one SeaAdventure.
					SeaCrewMember can manage many SeaAdventures.
					Sea Adventure can be managed by 1 SeaCrewMember.
					Sea Adventure can be managed by many crew members.
w1761374_Walking_Guide	0..1	directs	1..1	w1761374_Land_Adventure	A walking guide can direct only one group of Land adventure at one time.
					Walking guide cannot direct a LandAdventures if unavailable.
					LandAdventure always need to have one guide.
					Only one guide can direct a LandAdventure.
w1761374_Boat_Mechanic	1..*	Maintain	1..*	w1761374_Boat	One BoatMechanic can maintain one boat.
					BoatMechanic can be involved in the maintain of many boats.
					A minimum of one mechanic should maintain a boat

					A Boat can be maintian by more than one mechanic.
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Create a data dictionary to document how you identified the attributes and primary keys for each entity for ArchipelagoCrazy. To achieve this, fill in the table below to summarise and explain the meaning of each attribute and primary key.

Entity Name	Attributes for the entity	Justification
w1761374_Customer	w1761374_Custome_NIC (PK)	Unique key to identify each Customer
	w1761374_Name	Identify a customer
	w1761374_Phone_No	Contact the Customer
w1761374_Trip	w1761374_Trip_ID (PK)	Unique key to identify each trip
	w1761374_Trip_Period	Identify if trip in May or November
w1761374_Boat	w1761374_Boat_ID (PK)	Unique key to identify each boat
	w1761374_Boat_Name	Unique key to identify each boat
	w1761374_No_Passangers	Number of people boat can hold
	w1761374_Availability	If boat is available at a time
	w1761374_Service_Type	Type of service boat is used for
w1761374_Large_boat	w1761374_Island_Name	Name of island boat visits
	w1761374_Departure_Time	Time boat leaves mainland
	w1761374_Arrival_Time	Time boat arrives in island
	w1761374_Route	Route taken to visit island

w1761374_Small_Boat	w1761374_Island_Name	Name of island boat visits
	w1761374_Departure_Time	Time boat leaves an island
	w1761374_Arrival_Time	Time boat arrives in an island
	w1761374_Route	Route taken to visit island
	w1761374_No_Of_Islands	No of islands visited in route
w1761374_Paddle_Boat	w1761374_Type	If paddle boat is kayak, canoe, stand-up boat etc
	w1761374_Bay	Bay that can be explored
	w1761374_Creek	Creek that can be explored
w1761374_Adventure	w1761374_Adventure_ID (PK)	Unique key to identify each adventure
	w1761374_Type	Land adventure, Sea Adventure, Both
w1761374_Sea_Adventure	w1761374_Sea_Ad_Name	Category of sea adventure
w1761374_Sea_Crossing	w1761374_Meal_Included	If meal is needed or not
	w1761374_Sea_Route	If to an island or between islands
w1761374_Beach_Taxi	w1761374_Beach_Name	Beach visited by taxi service
w1761374_Marine_Exploration	w1761374_Route	Marine exploration path followed
w1761374_Land_Adventure	w1761374_Land_Ad_Name	Category of land adventure
w1761374_Walking_Tour	w1761374_Path	Path taken for walking tour
	w1761374_Tour_package	Type of walking tour package
	w1761374_Scheduled_Time	Time tour is scheduled
w1761374_Guided_Visit	w1761374_Landmark	Landmarks visited
w1761374_Staff	w1761374_EmpID (PK)	Unique key to identify each adventure
	w1761374_Emp_Type	What type of employee they are
w1761374_Sea_Crew	w1761374_Adventure_Managed	Type of adventure managed by employee
	w1761374_No_Of_Adventures	Total adventures handled
w1761374_Walking_Guide	w1761374_Land_Adventure_Type	If involved in Walking tour or guided visit
w1761374_Boat_Mechanic	w1761374_Boat_Name	Name of boat serviced