

**UNIVERSITY OF  
WESTMINSTER**



**INFORMATICS  
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**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)**

**Module Leader: Ragu Sivaraman**

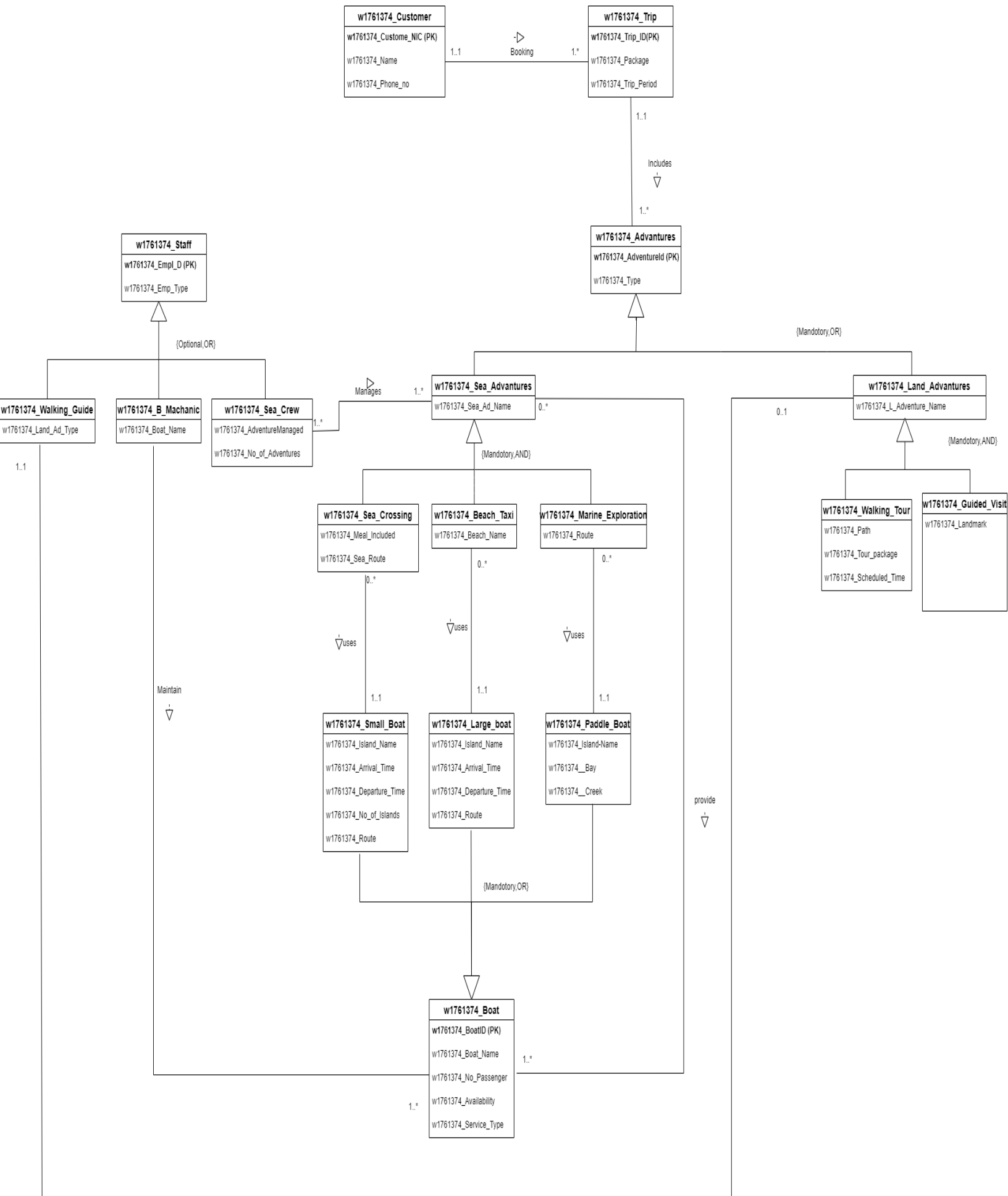
**Date of submission: 06 December 2021 at 13:00:00**

**Part A + B**

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**IIT Student ID: 2019530**

**UOW No: w1761374**



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.
--	--	--	--	--	---

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.

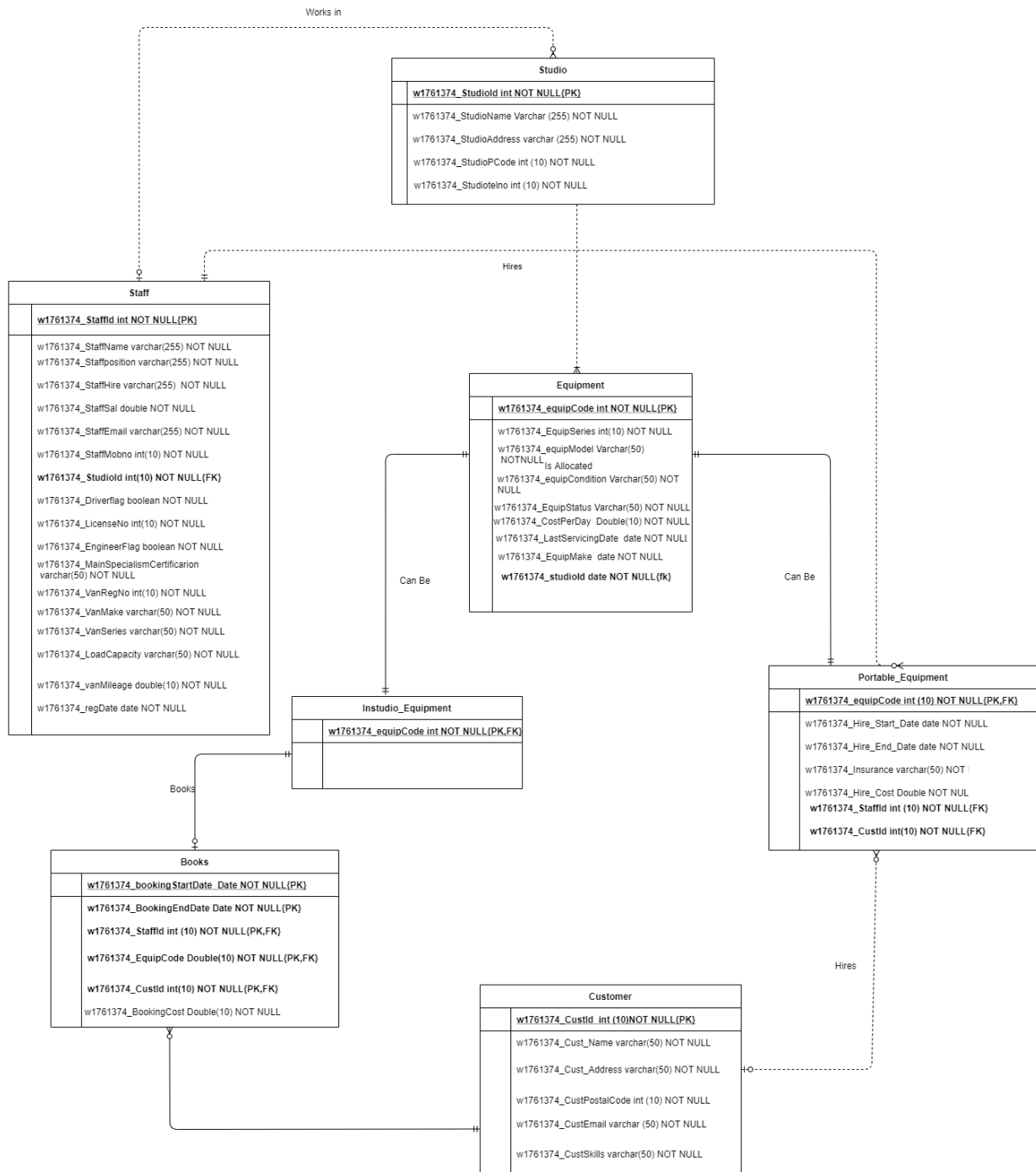
Entity Name	Attributes for the entity	Justification
w1761374_Customer	w1761374_Custome_NIC (PK)	Unique key to identify each Customer
	w1761374_Name	Identify a customer
	w1761374_Phone_No	Contact the Customer
w1761374_Trip	w1761374_Trip_ID (PK)	Unique key to identify each trip
	w1761374_Trip_Period	Identify 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




## Part B

5.



## Table Creations

Run SQL query/queries on database w1761374: 

```

1 CREATE TABLE `w1761374_staff` (
2   `w1761374_StaffId` int(10) NOT NULL,
3   `w1761374_StaffName` char(255) NOT NULL,
4   `w1761374_StaffPosition` varchar(255) NOT NULL,
5   `w1761374_StaffHireDate` date NOT NULL,
6   `w1761374_StaffsSal` double NOT NULL,
7   `w1761374_StaffEmail` varchar(255) NOT NULL,
8   `w1761374_StaffMobNo` int(10) NOT NULL,
9   `w1761374_StudioId` int(10) NOT NULL,
10  `w1761374_DriverFlag` tinyint(1) NOT NULL,
11  `w1761374_LicenseNo` int(10) NOT NULL,
12  `w1761374_EngineeringFlag` tinyint(1) NOT NULL,
13  `w1761374_MainSpecialismCertification` varchar(255) NOT NULL,
14  `w1761374_VanRegNo` int(10) NOT NULL,
15  `w1761374_vanMake` varchar(25) NOT NULL,
16  `w1761374_VanSeries` varchar(255) NOT NULL,

```

Clear Format Get auto-saved query

```

1 ALTER TABLE `w1761374_staff`
2   ADD PRIMARY KEY (`w1761374_StaffId`),
3   ADD KEY `regDate` (`w1761374_regDate`),
4   ADD KEY `fk_studio_id` (`w1761374_StudioId`);
5
6 ALTER TABLE `w1761374_staff`
7   ADD CONSTRAINT `fk_studio_id` FOREIGN KEY (`w1761374_StudioId`) REFERENCES `w1761374_studio` (`w1761374StudioId`);
8

```

```

CREATE TABLE `w1761374_books` ( `w1761374_BookingStartDate` date NOT NULL, `w1761374_BookingEndDate` date NOT NULL, `w1761374_StaffId` int(10) NOT NULL, `w1761374_EquipCode` int(10) NOT NULL, `w1761374_CustId` int(10) NOT NULL, `w1761374_BookingCost` double NOT NULL ) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;

```

[ Edit inline ] [ Edit ] [ Create PHP code ]

✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0157 seconds.)

```

CREATE TABLE `w1761374_customer` ( `w1761374_CustId` int(10) NOT NULL, `w1761374_CustName` varchar(50) NOT NULL, `w1761374_CustAddress` varchar(50) NOT NULL, `w1761374_CustPostalCode` int(10) NOT NULL, `w1761374_CustEmail` varchar(50) NOT NULL, `w1761374_CustSkill` varchar(50) NOT NULL ) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;

```

[ Edit inline ] [ Edit ] [ Create PHP code ]

✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0167 seconds.)

```

CREATE TABLE `w1761374_equipment` ( `w1761374_EquipCode` int(10) NOT NULL, `w1761374_EquipMake` varchar(50) NOT NULL, `w1761374_EquipSeries` varchar(50) NOT NULL, `w1761374_EquipModel` varchar(50) NOT NULL, `w1761374_EquipCondition` varchar(50) NOT NULL, `w1761374_EquipStatus` varchar(50) NOT NULL, `w1761374_LastServingDate` date NOT NULL, `w1761374_CostperDay` double NOT NULL, `w1761374_StudioID` int(10) NOT NULL ) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;

```

[ Edit inline ] [ Edit ] [ Create PHP code ]

✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0177 seconds.)

```

CREATE TABLE `w1761374_instudioequipment` ( `w1761374_EquipCode` int(10) NOT NULL ) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;

```

[ Edit inline ] [ Edit ] [ Create PHP code ]

✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0167 seconds.)

```

CREATE TABLE `w1761374_portable_equipment` ( `w1761374_HireStartDate` date NOT NULL, `w1761374_HireEndDate` date NOT NULL, `w1761374_Insurance` varchar(50) NOT NULL, `w1761374_HireCost` varchar(50) NOT NULL, `w1761374_CustId` int(10) NOT NULL, `w1761374_StaffId` int(10) NOT NULL, `w1761374_EquipCode` int(10) NOT NULL ) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;

```

[ Edit inline ] [ Edit ] [ Create PHP code ]

✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0172 seconds.)

MySQL returned an empty result set (i.e. zero rows). (Query took 0.0190 seconds.)

```
CREATE TABLE `w1761374_staff` (
  `w1761374_StaffId` int(9) NOT NULL,
  `w1761374_StaffName` char(255) NOT NULL,
  `w1761374_StaffPosition` varchar(255) NOT NULL,
  `w1761374_StaffHireDate` date NOT NULL,
  `w1761374_StaffSalary` double NOT NULL,
  `w1761374_StaffEmail` varchar(255) NOT NULL,
  `w1761374_StaffMobNo` int(10) NOT NULL,
  `w1761374_StudioId` int(10) NOT NULL,
  `w1761374_DriverFlag` tinyint(1) NOT NULL,
  `w1761374_LicenseNo` int(10) NOT NULL,
  `w1761374_EngineeringFlag` tinyint(1) NOT NULL,
  `w1761374_MainSpecialismCertification` varchar(255) NOT NULL,
  `w1761374_VanRegNo` int(10) NOT NULL,
  `w1761374_vanMake` varchar(25) NOT NULL,
  `w1761374_VanSeries` varchar(255) NOT NULL,
  `w1761374_loadCapacity` double NOT NULL,
  `w1761374_vanMileage` double NOT NULL,
  `w1761374_regDate` date NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;
```

[[Edit inline](#)] [[Edit](#)] [[Create PHP code](#)]

```
ALTER TABLE `w1761374_staff`
  ADD PRIMARY KEY (`w1761374_StaffId`),
  ADD KEY `regDate` (`w1761374_regDate`),
  ADD KEY `fk_studio_id` (`w1761374_StudioId`);
```

```
ALTER TABLE `w1761374_books`
  ADD PRIMARY KEY (`w1761374_BookingStartDate`,`w1761374_BookingEndDate`,`w1761374_StaffId`,`w1761374_EquipCode`,`w1761374_CustId`),
  ADD KEY `fk_StaffId` (`w1761374_StaffId`),
  ADD KEY `fk_EquipCode` (`w1761374_EquipCode`),
  ADD KEY `fk_CustId` (`w1761374_CustId`);
```

```
ALTER TABLE `w1761374_equipment`
  ADD PRIMARY KEY (`w1761374_EquipCode`),
  ADD KEY `fk_studio_id1` (`w1761374_StudioID`);
```

```
ALTER TABLE `w1761374_equipment`
  ADD PRIMARY KEY (`w1761374_EquipCode`),
  ADD KEY `fk_studio_id1` (`w1761374_StudioID`);
```

```
ALTER TABLE `w1761374_instudioequipment`
  ADD PRIMARY KEY (`w1761374_EquipCode`);
```

```
ALTER TABLE `w1761374_portable_equipment`
  ADD PRIMARY KEY (`w1761374_EquipCode`),
  ADD KEY `fk_StaffId4` (`w1761374_StaffId`),
  ADD KEY `fk_CustId2` (`w1761374_CustId`);
```

```
ALTER TABLE `w1761374_studio`
  ADD PRIMARY KEY (`w1761374_StudioId`);
```

```
ALTER TABLE `w1761374_books`
  ADD CONSTRAINT `fk_CustId` FOREIGN KEY (`w1761374_CustId`) REFERENCES `w1761374_customer` (`w1761374_CustId`),
  ADD CONSTRAINT `fk_EquipCode` FOREIGN KEY (`w1761374_EquipCode`) REFERENCES `w1761374_instudioequipment` (`w1761374_EquipCode`),
  ADD CONSTRAINT `fk_StaffId` FOREIGN KEY (`w1761374_StaffId`) REFERENCES `w1761374_staff` (`w1761374_StaffId`);
```

```
ALTER TABLE `w1761374_equipment`
  ADD CONSTRAINT `fk_studio_id1` FOREIGN KEY (`w1761374_StudioID`) REFERENCES `w1761374_studio` (`w1761374_StudioId`);
```

```
ALTER TABLE `w1761374_instudioequipment`
  ADD CONSTRAINT `fk_EquipCode1` FOREIGN KEY (`w1761374_EquipCode`) REFERENCES `w1761374_equipment` (`w1761374_EquipCode`);
```

```
13
14 ALTER TABLE `w1761374_equipment`
15 ADD CONSTRAINT `fk_studio_id1` FOREIGN KEY (`w1761374_StudioID`) REFERENCES `w1761374_studio` (`w1761374_StudioID`);
16
17 ALTER TABLE `w1761374_instudioequipment`
18 ADD CONSTRAINT `fk_EquipCode1` FOREIGN KEY (`w1761374_EquipCode`) REFERENCES `w1761374_equipment` (`w1761374_EquipCode`);
19
20 ALTER TABLE `w1761374_portable_equipment`
21 ADD CONSTRAINT `fk_CustId2` FOREIGN KEY (`w1761374_CustId`) REFERENCES `w1761374_customer` (`w1761374_CustId`),
22 ADD CONSTRAINT `fk_EquipCode3` FOREIGN KEY (`w1761374_EquipCode`) REFERENCES `w1761374_equipment` (`w1761374_EquipCode`),
23 ADD CONSTRAINT `fk_StaffId4` FOREIGN KEY (`w1761374_StaffId`) REFERENCES `w1761374_staff` (`w1761374_StaffId`);
24
25
26 ALTER TABLE `staff`
27 ADD CONSTRAINT `fk_studio_id` FOREIGN KEY (`w1761374_StudioID`) REFERENCES `w1761374_studio` (`w1761374_StudioID`);
28
```

Server: 127.0.0.1 » Database: w1761374\_db » Table: w1761374\_books

Browse Structure SQL Search Insert Export Import Privileges Operations

Table structure Relation view

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/>	1 w1761374_BookingStartDate	date			No	None			Change  Drop  More
<input type="checkbox"/>	2 w1761374_BookingEndDate	date			No	None			Change  Drop  More
<input type="checkbox"/>	3 w1761374_StaffId	int(10)			No	None			Change  Drop  More
<input type="checkbox"/>	4 w1761374_EquipCode	int(10)			No	None			Change  Drop  More
<input type="checkbox"/>	5 w1761374_CustId	int(10)			No	None			Change  Drop  More
<input type="checkbox"/>	6 w1761374_BookingCost	double			No	None			Change  Drop  More

Server: 127.0.0.1 » Database: w1761374\_db » Table: w1761374\_customer

Browse Structure SQL Search Insert Export Import Privileges Operations Tracking

Table structure Relation view

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/>	1 w1761374_CustId	int(10)			No	None			Change  Drop  More
<input type="checkbox"/>	2 w1761374_CustName	varchar(50)	utf8mb4_general_ci		No	None			Change  Drop  More
<input type="checkbox"/>	3 w1761374_CustAddress	varchar(50)	utf8mb4_general_ci		No	None			Change  Drop  More
<input type="checkbox"/>	4 w1761374_CustPostalCode	int(10)			No	None			Change  Drop  More
<input type="checkbox"/>	5 w1761374_CustEmail	varchar(50)	utf8mb4_general_ci		No	None			Change  Drop  More
<input type="checkbox"/>	6 w1761374_CustSkill	varchar(50)	utf8mb4_general_ci		No	None			Change  Drop  More

Server: 127.0.0.1 » Database: w1761374\_db » Table: w1761374\_studio

BrowseStructureSQLSearchInsertExportImportPrivilegesOperationsTrackingTriggers

MySQL returned an empty result set (i.e. zero rows). (Query took 0.0237 seconds.)

ALTER TABLE `w1761374\_studio` ADD PRIMARY KEY(`w1761374\_StudioId`);

[ Edit inline ] [ Edit ] [ Create PHP code ]

Table structureRelation view

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/>	1 w1761374_StudioId	int(10)			No	None			Change  Drop  More
<input type="checkbox"/>	2 w1761374_StudioName	varchar(50)	utf8mb4_general_ci		No	None			Change  Drop  More
<input type="checkbox"/>	3 w1761374_StudioAddress	varchar(50)	utf8mb4_general_ci		No	None			Change  Drop  More
<input type="checkbox"/>	4 w1761374_StudioPcode	int(10)			No	None			Change  Drop  More
<input type="checkbox"/>	5 w1761374_StudioTelNo	int(10)			No	None			Change  Drop  More

Table	Action	Rows	Type	Collation	Size	Overhead
<input type="checkbox"/> w1761374_books	Browse  Structure  Search  Insert  Empty  Drop	0	InnoDB	utf8mb4_general_ci	64.0 KiB	-
<input type="checkbox"/> w1761374_customer	Browse  Structure  Search  Insert  Empty  Drop	2	InnoDB	utf8mb4_general_ci	16.0 KiB	-
<input type="checkbox"/> w1761374_equipment	Browse  Structure  Search  Insert  Empty  Drop	0	InnoDB	utf8mb4_general_ci	16.0 KiB	-
<input type="checkbox"/> w1761374_instudioequipment	Browse  Structure  Search  Insert  Empty  Drop	0	InnoDB	utf8mb4_general_ci	16.0 KiB	-
<input type="checkbox"/> w1761374_portable_equipment	Browse  Structure  Search  Insert  Empty  Drop	0	InnoDB	utf8mb4_general_ci	16.0 KiB	-
<input type="checkbox"/> w1761374_staff	Browse  Structure  Search  Insert  Empty  Drop	0	InnoDB	utf8mb4_general_ci	48.0 KiB	-
<input type="checkbox"/> w1761374_studio	Browse  Structure  Search  Insert  Empty  Drop	0	InnoDB	utf8mb4_general_ci	16.0 KiB	-
7 tables	Sum	2	InnoDB	utf8mb4_general_ci	192.0 KiB	0 B

Server: 127.0.0.1 » Database: w1761374\_db » Table: w1761374\_studio

BrowseStructureSQLSearchInsertExportImportPrivilegesOperationsTrackingTriggers

Table structureRelation view

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/>	1 w1761374_StudioId	int(10)			No	None			Change  Drop  More
<input type="checkbox"/>	2 w1761374_StudioName	varchar(50)	utf8mb4_general_ci		No	None			Change  Drop  More
<input type="checkbox"/>	3 w1761374_StudioAddress	varchar(50)	utf8mb4_general_ci		No	None			Change  Drop  More
<input type="checkbox"/>	4 w1761374_StudioPcode	int(10)			No	None			Change  Drop  More
<input type="checkbox"/>	5 w1761374_StudioTelNo	int(10)			No	None			Change  Drop  More

## Data Insertion

There have insert Queries for Tables.

`INSERT INTO `w1761374_studio` (`w1761374_StudioId`, `w1761374_StudioName`, `w1761374_StudioAddress`, `w1761374_StudioPcode`, `w1761374_StudioTelNo`) VALUES ('001', 'Colombo ONE', 'Colombo 01', '1211', '098123234'), ('002', 'Kollupity Api', 'Kollupitya', '232', '12212213');`

[ Edit inline ] [ Edit ] [ Create PHP code ]

Run SQL query/queries on table w1761374.w1761374\_studio:

```
1 INSERT INTO `w1761374_studio` (`w1761374_StudioId`, `w1761374_StudioName`, `w1761374_StudioAddress`, `w1761374_StudioPcode`, `w1761374_StudioTelNo`) VALUES ('001', 'Colombo ONE', 'Colombo 01', '1211', '098123234'), ('002', 'Kollupity Api', 'Kollupitya', '232', '12212213');
```

w1761374\_StudioId  
w1761374\_StudioName  
w1761374\_StudioAddress  
w1761374\_StudioPcode  
w1761374\_StudioTelNo

Server: 127.0.0.1 » Database: w1761374 » Table: w1761374\_staff

Browse Structure SQL Search Insert Export Import Privileges Operations Tracking Triggers

✓ 1 row inserted.

```
INSERT INTO `w1761374_staff` (`w1761374_StaffId`, `w1761374_StaffName`, `w1761374_StaffPosition`, `w1761374_StaffHireDate`, `w1761374_StaffSal`, `w1761374_StaffEmail`, `w1761374_StaffMobNo`, `w1761374_StudioId`, `w1761374_DriverFlag`, `w1761374_LicenseNo`, `w1761374_EngineeringFlag`, `w1761374_MainSpecialismCertification`, `w1761374_VanRegNo`, `w1761374_vanMake`, `w1761374_VanSeries`, `w1761374_loadCapacity`, `w1761374_vanMileage`, `w1761374_regDate`) VALUES ('001', 'Achintha Jaye', 'CEO', '2014-12-01', '120000', 'achi@gmail.com', '45343', '001', '1', '11', '0', 'Loll', '2221', 'Japan', 'Old', '222', '2000', '2021-12-01');
```

[ Edit inline ] [ Edit ] [ Create PHP code ]

Run SQL query/queries on table w1761374.w1761374\_staff:

```
1 INSERT INTO `w1761374_staff` (`w1761374_StaffId`, `w1761374_StaffName`, `w1761374_StaffPosition`, `w1761374_StaffHireDate`, `w1761374_StaffSal`, `w1761374_StaffEmail`, `w1761374_StaffMobNo`, `w1761374_StudioId`, `w1761374_DriverFlag`, `w1761374_LicenseNo`, `w1761374_EngineeringFlag`, `w1761374_MainSpecialismCertification`, `w1761374_VanRegNo`, `w1761374_vanMake`, `w1761374_VanSeries`, `w1761374_loadCapacity`, `w1761374_vanMileage`, `w1761374_regDate`) VALUES ('001', 'Achintha Jaye', 'CEO', '2014-12-01', '120000', 'achi@gmail.com', '45343', '001', '1', '11', '0', 'Loll', '2221', 'Japan', 'Old', '222', '2000', '2021-12-01');
```

w1761374\_StaffId  
w1761374\_StaffName  
w1761374\_StaffPosition  
w1761374\_StaffHireDate  
w1761374\_StaffSal  
w1761374\_StaffEmail  
w1761374\_StaffMobNo  
w1761374\_StudioId  
w1761374\_DriverFlag  
w1761374\_LicenseNo  
w1761374\_Engineering  
w1761374\_MainSpecial  
w1761374\_VanRegNo  
w1761374\_vanMake  
w1761374\_VanSeries  
w1761374\_loadCapacity  
w1761374\_vanMileage  
w1761374\_regDate

Answer:

There is retrieve query for question 6.

Server: 127.0.0.1 » Database: w1761374 » Table: w1761374\_equipment

Browse

Structure

SQL

Search

Insert

Export

Import

Privileges

Operations

Tracking

Run SQL query/queries on table w1761374.w1761374\_equipment:

1

2

3

4

5

6

7

8

```
SELECT std.studioName, equip.equipSeries,equip.equipMake, equip.equipModel
FROM studio std
LEFT JOIN equipment equip ON st.studioId = equip.studioStudioId
LEFT JOIN portable_equipment portEquip ON portEquip.equipmentEquipCode = equip.equipCode
WHERE equip.hireCose > 125 AND std.studioAddresss = 'London'
```

Showing rows 0 - 1 (2 total, Query took 0.0047 seconds.)

```
SELECT stdodo.w1761374_StudioName, equip.w1761374_EquipMake, equip.w1761374_EquipSeries, equip.w1761374_EquipModel,
stdodo.w1761374_StudioAddress, pe.w1761374_HireCost FROM w1761374_studio stdodo LEFT JOIN w1761374_equipment equip ON stdodo.w1761374_StudioId =
equip.w1761374_StudioID LEFT JOIN w1761374_portable_equipment pe ON pe.w1761374_EquipCode = equip.w1761374_EquipCode WHERE
stdodo.w1761374_StudioAddress = 'London' AND pe.w1761374_HireCost > 125;
```

Profiling

Edit inline

Edit

Explain SQL

Create PHP code

Refresh

Show all

Number of rows: 25

Filter rows: Search this table

Sort by key: None

+ Options

w1761374_StudioName	w1761374_EquipMake	w1761374_EquipSeries	w1761374_EquipModel	w1761374_StudioAddress	w1761374_HireCost
NUIK	JApan	2017	Yamaha	London	500
KESO	Fam	2000	Nik	London	2200

7.

	Relational Database	NoSQL Database
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<b>Schemas</b>	Relational database has a rigid schema. (MongoDB, 2020)	NoSQL database has a flexible schema.
<b>Query Language used</b>	Oracle, MySQL, PostgreSQL	MongoDB, DynamoDB, Couch DB
<b>Data storage model</b>	Utilizes tables with fixed columns and rows. (MongoDB, 2020)	Utilizes documents such as JSON. (Microsoft, n.d.)
<b>Structure</b>	Relational databases consist of a centralized structure.	NoSQL databases consist of a decentralized structure.
<b>Workload</b>	Ideal for the usage when data is coming in low velocity and fits for thousands of transactions per second. (MongoDB, 2020)	Ideal for the usage when data is coming in high velocity and require large scale latencies.
<b>Performance</b>	Relational database performance is slower than NoSQL database.	Different types of data structures used in NoSQL provides a faster performance compared to relational database. (Mong, 2020)
<b>Deployment</b>	Deployment is done using large, high- end hardware. (MongoDB, 2020)	Deployment is done using commodity hardware.
<b>Security</b>	Only readable scalability is available for the users.	Both readable and writeable scalabilities are available for the users.
<b>Data Consistency</b>	Utilization of acid properties such as Atomicity, Consistency, Durability, and Isolation. (MongoDB, 2020)	Utilization of eventually consistent.



<b>Design</b>	A complex design is used to build relational database. (MongoDB, 2020)	A simple design is used to build NoSQL database.
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## References

Microsoft, n.d. *Microsoft*. [Online]

Available at: <https://docs.microsoft.com/en-us/dotnet/architecture/cloud-native/relational-vs-nosql-data#considerations-for-relational-vs-nosql-systems>

Mong, 2020. [Online]

Available at: <https://www.mongodb.com/nosql-explained/nosql-vs-sql>

MongoDB, 2020. *MongoDB*. [Online]

Available at: <https://www.mongodb.com/nosql-explained/nosql-vs-sql>

[Accessed 2021].