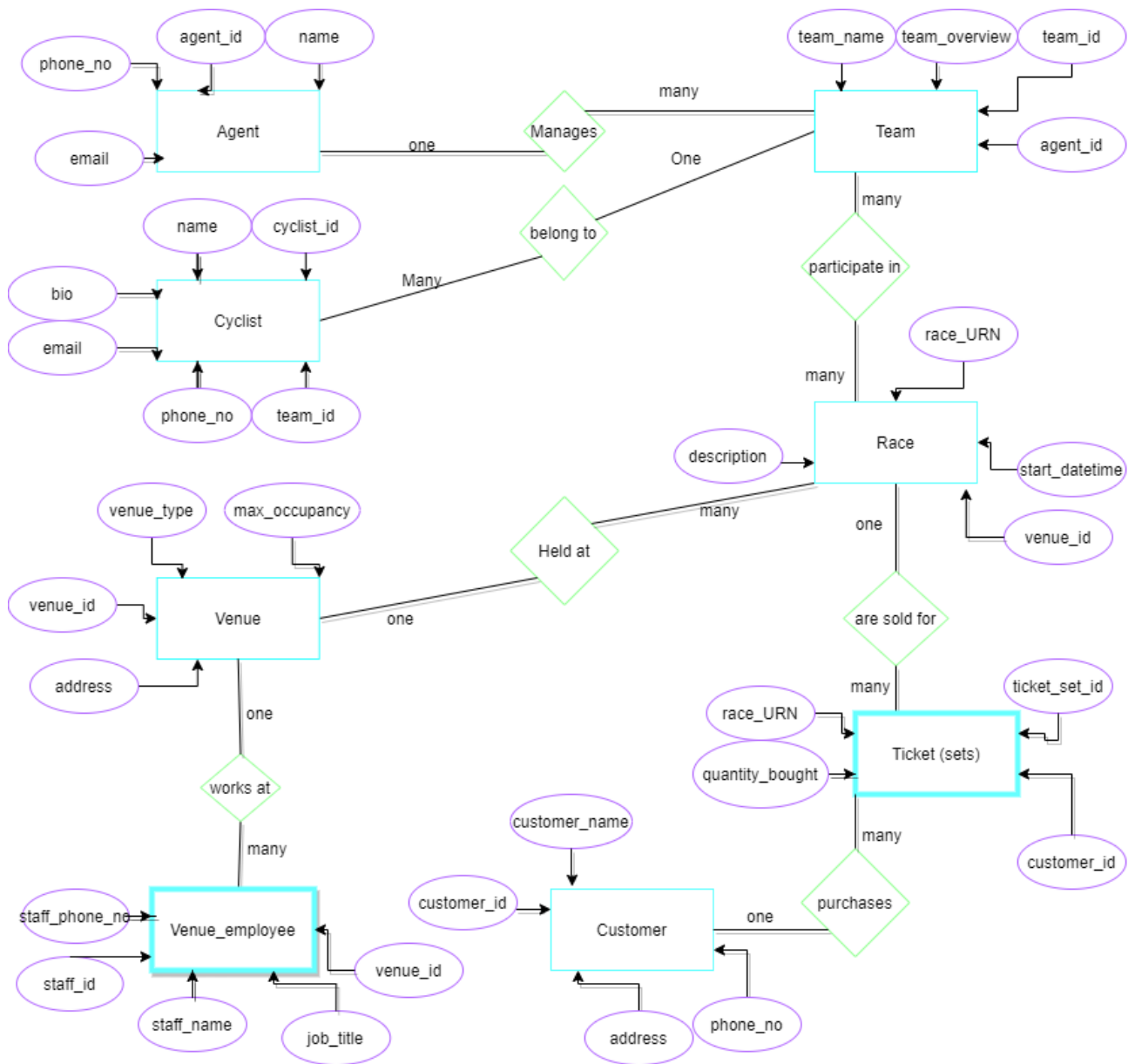


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ER Diagram



Assumptions

- The customers can buy tickets in a 'set' for each race they are attending. A set contains an unlimited amount of tickets for a specific race and links the lead customer to the race. This way it is easy to see how many tickets the customer buys for each race they are attending, and they can buy unlimited sets.
- Every entity is provided a unique ID for ease of identification, rather than something like email, phone number, address, or name which could be non-unique, shared, or simply too lengthy to be used as a primary key.
- All teams are represented by one agent, though the agent does not have to be unique, as outlined in the brief. All cyclists belong to a team.
- 'Participates in' shows the different races that there are and which teams are competing in them, as there are many teams that can compete in many different races, so these must be defined in their own table. This follows the advice from a lecturer that teams participates in races, rather than individual cyclists on behalf of their team.
- Each team will submit no more than 15 cyclists, so no parameters need to be put into place to prevent extra numbers being entered into the cyclists table.
- Contact details for individual cyclists are given, as the brief states that basic contact details are required for teams, but to contact the team as a whole the agent would be a better method, whilst if an individual in a team needs contacting, the cyclist has their own contact details listed for this.
- Venue Employees is a weak entity because without a venue there could be no employees. Tickets is also a weak entity as customers and races can still exist without tickets, but tickets need attendees and something to attend.
- Customers to Tickets is a one to many, as one customer purchases potentially many sets of tickets. Tickets are bought by many individuals, however each ticket set can only be purchased by one person.
- Every value included is NOT NULL, due to these all filling requested criteria from the event organisers, or being a primary key. This prevents people submitting with a lack of information which the organisers have explicitly requested.

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CREATE TABLE Statements and SELECT * Statements

```
CREATE TABLE Agent(  
  agent_id VARCHAR(5) NOT NULL,  
  name VARCHAR(20) NOT NULL,  
  phone_no VARCHAR(15) NOT NULL,  
  email VARCHAR(30) NOT NULL,  
  PRIMARY KEY (agent_id)  
) ENGINE = INNODB;
```

SELECT * FROM Agent;

agent_id	name	phone_no	email
A01	Giovanni	07858585858	giovanni@teamrocket.com
A02	Archie	07848484848	archie@teammagma.com
A03	Maxie	07898989898	maxie@teamaqua.com

```
CREATE TABLE Venue (  
  venue_id VARCHAR(5) NOT NULL,  
  venue_type VARCHAR(20) NOT NULL,  
  address VARCHAR(30) NOT NULL,  
  max_occupancy int NOT NULL,  
  PRIMARY KEY (venue_id)  
) ENGINE = INNODB;
```

SELECT * FROM Venue;

venue_id	venue_type	address	max_occupancy
V01	Road Race	Jubilife City	250
V02	Stadium	Nimbasa City	500
V03	Park Race	Pastoria City	200

```
CREATE TABLE Team (  
  team_id VARCHAR(5) NOT NULL,  
  team_name VARCHAR(20) NOT NULL,  
  team_overview VARCHAR(150) NOT NULL,  
  agent_id VARCHAR(5) NOT NULL,  
  PRIMARY KEY (team_id),  
  FOREIGN KEY (agent_id) REFERENCES Agent(agent_id)  
) ENGINE = INNODB;
```

SELECT * FROM Team;

team_id	team_name	team_overview	agent_id
T01	Team Rocket	Cycling today, world dominaton tomorrow	A01
T02	Team Magma	Former Triathlon team favouring running, an	A02
T03	Team Aqua	Former Triathlon team favouring swimming,	A03
T04	Team Galactic	Shooting for the stars	A01

```
CREATE TABLE Cyclist (  
  cyclist_id VARCHAR(5) NOT NULL,  
  cyclist_name VARCHAR(20) NOT NULL,  
  bio VARCHAR(100) NOT NULL,  
  email VARCHAR(30) NOT NULL,  
  phone_no VARCHAR(15) NOT NULL,  
  team_id VARCHAR(5) NOT NULL,  
  PRIMARY KEY (cyclist_id),  
  FOREIGN KEY (team_id) REFERENCES Team(team_id)  
) ENGINE = INNODB;
```

SELECT * FROM Cyclist;

cyclist_id	cyclist_name	bio	email	phone_no	team_id
CY01	Jessie	Team Rocket Grunt	jessie@teamrocket.com	07939393939	T01
CY02	James	Team Rocket Grunt	james@teamrocket.com	07949494949	T01
CY03	Tabitha	Team Magma Admin	tabitha@teammagma.com	07646464646	T02
CY04	Shelly	Team Aqua Admin	shelly@teamaqua.com	07656565656	T03
CY05	Charon	Team Galactic Commander	charon@teamgalactic.com	07050505050	T04

```
CREATE TABLE Customer(  
  customer_id VARCHAR(5) NOT NULL,  
  customer_name VARCHAR(20) NOT NULL,  
  address VARCHAR(30) NOT NULL,  
  phone_no VARCHAR(15) NOT NULL,  
  PRIMARY KEY (customer_id)  
) ENGINE = INNODB;
```

SELECT * FROM Customer;

customer_id	customer_name	address	phone_no
CU01	Ash Ketchum	2 Pallet Town	07686868686
CU02	Dawn	3 Twinleaf Town	07959595959
CU03	Wally	2 Petalburg City	07383838383

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```
CREATE TABLE Ticket (  
  ticket_set_id VARCHAR(5) NOT NULL,  
  quantity_bought INT NOT NULL,  
  race_URN VARCHAR(5) NOT NULL,  
  customer_id VARCHAR(5) NOT NULL,  
  PRIMARY KEY (ticket_set_id),  
  FOREIGN KEY (race_URN) REFERENCES Race(race_URN),  
  FOREIGN KEY (customer_id) REFERENCES Customer(customer_id)  
) ENGINE = INNODB;
```

```
SELECT * FROM Ticket;
```

ticket_set_id	quantity_bought	race_URN	customer_id
TS01	10	R01	CU01
TS02	5	R03	CU01
TS03	15	R02	CU02
TS04	10	R02	CU03
TS05	10	R04	CU02
TS06	15	R05	CU02
TS07	5	R06	CU03

```
CREATE TABLE Race (  
  race_URN VARCHAR(5) NOT NULL,  
  race_description VARCHAR(150) NOT NULL,  
  start_date_time DATETIME NOT NULL,  
  venue_id VARCHAR(5) NOT NULL,  
  PRIMARY KEY (race_URN),  
  FOREIGN KEY (venue_id) REFERENCES Venue(venue_id)  
) ENGINE = INNODB;
```

```
SELECT * FROM Race;
```

race_URN	race_description	start_date_time	venue_id
R01	Men's 50k Race	2020-08-05 10:30:00	V01
R02	Women's 50k Race	2020-08-05 15:00:00	V01
R03	Men's Sprint Race	2020-08-05 10:00:00	V02
R04	Women's Sprint Race	2020-08-05 15:00:00	V02
R05	Women's Time Trial	2020-08-06 10:00:00	V03
R06	Men's Time Trial	2020-08-06 15:30:00	V03

```
CREATE TABLE Employee (  
  staff_id VARCHAR(5) NOT NULL,  
  staff_name VARCHAR(20) NOT NULL,  
  job_title VARCHAR(20) NOT NULL,  
  phone_no VARCHAR(15) NOT NULL,  
  venue_id VARCHAR(5) NOT NULL,  
  PRIMARY KEY (staff_id),  
  FOREIGN KEY (venue_id) REFERENCES Venue(venue_id)  
) ENGINE = INNODB;
```

```
SELECT * FROM Employee;
```

staff_id	staff_name	job_title	phone_no	venue_id
E01	Matori	Manager	07272727272	V02
E02	Archer	Senior Janitor	07474747474	V01
E03	Ghetsis	Senior Janitor	07373737373	V01
E04	Lusamine	Director	07575757575	V03

```
CREATE TABLE Participates_In (  
  race_URN VARCHAR(5) NOT NULL,  
  team_id VARCHAR(5) NOT NULL,  
  FOREIGN KEY (race_URN) REFERENCES Race(race_URN),  
  FOREIGN KEY (team_id) REFERENCES Team(team_id)  
) ENGINE = INNODB;
```

```
SELECT * FROM Participates_In;
```

race_URN	team_id
R01	T01
R02	T02
R02	T03
R02	T04