

### Assignment 1.

**Q1[total 2: (-1 point for every mistake)]** Consider a table **Payment**. It has the following fields: **payment\_id**, **customer\_id**, **staff\_id**, **amount**, **payment\_date**. The **payment\_id** field identifies the tuple. The **customer\_id** and **staff\_id** fields are foreign keys to the **Customer** and **Staff** table, respectively. It tells us which customer made the payment and which staff member processed the payment. The last field denotes the date when the payment was made. Obviously, a customer can make several payments on the same date. Complete the following picture by putting checkmarks where appropriate. The picture is for the **Payment** table. For example, there is a checkmark for **payment\_id** and **Primary key** because **payment\_id** is the primary key for the **Payment** table.

	Primary key	Candidate Key	Super key
payment_id			
customer_id			
payment_id,customer_id			
amount, payment_date			
payment_id,staff_id			

**Q2[total 8: 2 per table]** Suppose you want to record information about soccer players, their teams, the games where they played, and how many goals they scored in each game. Create a **SoccerPlayer** table that stores information about the soccer players. Create a **Game** table that stores information about the games. Every game is between two teams. Record the number of goals scored by each team. Create a **Team** table that stores information about all the teams. Every soccer player belongs to exactly one team (i.e., add a **team** field to the **SoccerPlayer** table). Lastly, create a **Participate** table that shows which player played in which game and how many goals they scored. If a player didn't score, then 0 will appear for **goalsScored**.

Submit the **create table** statements for the four tables. Include primary key and foreign key constraints.

**Q3[4: 1 per table]** Show a sequence of **insert into** statements that populate all four tables. The order of the statements matters!

**Q4[total 8: 2 per query]** Create the tables in MySQL and populate with random data. Then write, test, and submit the SQL for the following queries. Add the **distinct** keyword if you want to eliminate duplicates.

- Print the names of soccer players that have scored a hat-trick (3 or more goals per game).
- Print the names of teams that have one or more players that have scored a hat-trick.
- Print the names of teams that have scored more than 3 goals in a single game.
- Suppose that "Cal Poly" is one of the teams. Print the names of all teams that Cal Poly has beaten. Cal Poly has beaten an opponent if we have scored more goals than the opponent in a single game.

Submit via Canvas in Word or pdf format.