**CSCI235: Database Systems**

**Assignment 1**

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**Task 2**

PLAYER ( player-full-name, date-of-birth, preferred-position-played, team-name )

1. Player-full-name, date-of-birth → team-name
2. Player-full-name, date-of-birth → team-name

Minimal key: player-full-name, date-of-birth, preferred-position-played

1. Schema satisfies 1NF as all columns are single value (assuming multiples in preferred-position-played are separate entries)

Schema does not satisfy 2NF as team-name is dependent on a subset of minimal key

1. PLAYER( player-full-name, date-of-birth, preferred-position-played)

PLAYERLIST( player-full-name, date-of-birth, team-name )

Player-full-name, date-of-birth → team-name

TEAM ( name, city, street, player-full-name, date-of-birth )

1. Name → city, street

Player-full-name, date-of-birth → name

1. Name → city, street

Player-full-name, date-of-birth → name therefore by transient rule player-full-name, date-of-birth → city, street

Minimal key: player-full-name, date-of-birth

1. Schema satisfies 1NF as all columns are single value

Schema satisfies 2NF as all attributes are fully dependant on primary keys

Schema does not satisfy 3NF as minimal key has a transitive functional dependency

1. TEAM ( name, city, street)

Name → city, street

PLAYERLIST ( name, player-full-name, date-of-birth)

Player-full-name, date-of-birth → name

GAME ( home-team-name, away-team-name, start-date-time, venue )

1. Start-date-time, venue → home-team-name, away-team-name
2. Start-date-time, venue → home-team-name, away-team-name

Minimal key: start-date-time, venue

1. Schema satisfies 1NF as all columns are single value

Schema satisfies 2NF as all attributes are fully dependant on primary keys

Schema satisfies 3NF as there are no transitive functional dependencies

Schema satisfies BCNF as all minimal keys are super keys

1. Already in BCNF