

# **IT214: Database Management Systems**

**Valorant (Game Database)**

**Course instructor: Prof. PM Jat**



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- **Minimal FD Set:**

1. **Region:**

Server\_location → region\_name

Candidate key: Server\_location

2. **Account:**

{playerid, email} → VP

{playerid, email} → RP

{playerid, email} → creation\_date

{playerid, email} → ingame\_name

{playerid, email} → tagline

{playerid, email} → account\_level

{playerid, email} → account\_xp

{playerid, email} → username

{playerid, email} → dob

{playerid, email} → password

{playerid, email} → server\_location

Candidate key: {playerid, email}

3. **Friend:**

No FDs.

Since there are no FDs, all attributes combined make a candidate key.

**4. Weapon:**

weapon\_name → weapon\_type  
weapon\_name → weapon\_price  
weapon\_name → firerate  
weapon\_name → magazine\_size

Candidate key: weapon\_name

**5. Weapon\_damage:**

{weapon\_name, range} → headshot\_damage  
{weapon\_name, range} → bodyshot\_damage  
{weapon\_name, range} → legshot\_damage

Candidate key: {weapon\_name, range}

**6. Skin\_data:**

Skin\_name → skin\_tier

Candidate key: skin\_name

**7. Skin:**

{weapon\_name, skin\_name} → skin\_price

Candidate key: {weapon\_name, skin\_name}

**8. Player\_skin:**

No FDs.

Since there are no FDs, all attributes combined make a candidate key.

**9. System\_rank:**

rank\_name → min\_rating\_req

Candidate key: rank\_name

**10. Player\_rank:**

{playerid, email, episode} → rank\_name

{playerid, email, episode} → rank\_rating

{playerid, email, episode} → total\_rating

Candidate key: {playerid, email, episode}

**11. Map:**

map\_name → map\_description

Candidate key: map\_name

**12. Game\_mode:**

game\_mode\_name → game\_mode\_description

Candidate key: game\_mode\_name

**13. Match:**

matchid → match\_date

matchid → start\_time

matchid → match\_length\_minutes

matchid → map\_name

matchid → game\_mode\_name

Candidate key: matchid

**14.Round:**

{roundid, matchid} → round\_start\_time

{roundid, matchid} → round\_end\_time

Candidate key: {roundid, matchid}

**15.Events:**

eventid → event\_name

eventid → event\_description

Candidate key: eventid

**16.Team:**

teamid → team\_description

Candidate key: teamid

**17.Team\_stats:**

{teamid, matchid} → plants

{teamid, matchid} → diffuses

{teamid, matchid} → first\_bloods

{teamid, matchid} → rounds\_won

{teamid, matchid} → rounds\_lost

Candidate key: {teamid, matchid}

**18.Round\_wise\_weapon\_stats:**

{playerid, email, matchid, roundid, eventid} → weapon name

{playerid, email, matchid, roundid, eventid} → kills

{playerid, email, matchid, roundid, eventid} → assists

{playerid, email, matchid, roundid, eventid} → score

{playerid, email, matchid, roundid, eventid} → economic\_rating

{playerid, email, matchid, roundid, eventid} → round\_result

Candidate key: {playerid, email, matchid, roundid, eventid}

**19.Agent:**

agent\_name → agent\_role

Candidate key: agent\_name

**20.Ability:**

Ability\_name → ability\_description

Ability\_name → max\_no\_of\_abilities\_per\_round

Ability\_name → ability\_price

Ability\_name → agent\_name

Candidate key: ability\_name

**21.Player\_match\_stats:**

{playerid, email, matchid} → is\_winner

{playerid, email, matchid} → kills

{playerid, email, matchid} → deaths

{playerid, email, matchid} → assists

{playerid, email, matchid} → mvp

{playerid, email, matchid} → teamid

{playerid, email, matchid} → agent\_name

Candidate key: {playerid, email, matchid}

- **Proof that relations are in BCNF:**

→ As we can see here, all FDs of each table contains it's candidate key on the left hand side and there are no partial dependencies and also there are no multivalued attributes. So, we can say that all the tables are in BCNF.

- ER Diagram:

[https://drive.google.com/file/d/1Fe33nHTKrh20N96uwMbB7KEIAXZKqqP5/view?usp=share\\_link](https://drive.google.com/file/d/1Fe33nHTKrh20N96uwMbB7KEIAXZKqqP5/view?usp=share_link)

- Relational Schema:

[https://drive.google.com/file/d/1Xya50bqwgeuj\\_yRbLJlx3\\_aaVnsQLpjS/view?usp=share\\_link](https://drive.google.com/file/d/1Xya50bqwgeuj_yRbLJlx3_aaVnsQLpjS/view?usp=share_link)





