



**Department of Electrical,  
Computer, & Biomedical Engineering**  
Faculty of Engineering  
& Architectural Science

<b>Course Title:</b>	Fund. of Data Engineering
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<b>Assignment/Lab Number:</b>	5
<b>Assignment/Lab Title:</b>	Data Programming

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\*By signing above you attest that you have contributed to this written lab report and confirm that all work you have contributed to this lab report is your own work. Any suspicion of copying or plagiarism in this work will result in an investigation of Academic Misconduct and may result in a "0" on the work, an "F" in the course, or possibly more severe penalties, as well as a Disciplinary Notice on your academic record under the Student Code of Academic Conduct, which can be found online at:  
<http://www.ryerson.ca/senate/current/pol6>

Start of Application:

Welcome to the Valorant Tracker Database Application:

- Select an action:
- 1. List Players
  - 2. List Teams
  - 3. List Coaches
  - 4. List Guns
  - 5. List Matches
  - 6. Add a new Player
  - 7. Add a new Team
  - 8. Add a new Coach
  - 9. Add a new Gun
  - 10. Add a new Match
  - 11. Common Query Questions
  - 12. Exit
- Enter your choice:

User is prompt with a list of options to choose from and a welcome message.

Selecting the a list of one of the entities:

Players	Teams	Coaches	Guns	Matches
Enter your choice: 1 1: Tenz 2: Less 3: Demon1 4: Aspas 5: Alfajer 6: Zyppan 7: ZmjKK 8: f0rsakeN 9: stax 10: yosemite	Enter your choice: 2 1: NRG 2: Sentinals 3: Loud 4: Leviatan 5: Fnatic 6: Navi 7: Paper Rex 8: EDward Gaming 9: DRX 10: BilliBilli Gaming	Enter your choice: 3 1: Chet 2: Adam 3: Pedro 4: Alex 5: Chris 6: Carl 7: Lo 8: Pyeon 9: Zhiqiang 10: Alexandre	Enter your choice: 4 1: classic 2: ghost 3: sheriff 4: spectre 5: judge 6: phantom 7: vandal 8: marshal 9: operator 10: odin	Enter your choice: 5 1: 2024-03-02 2: 2024-03-03 3: 2024-02-17 4: 2024-02-25 5: 2024-02-25 7: 2024-02-27 8: 2024-02-29 9: 2024-03-01 10: 2024-03-23 11: 2024-03-24

After selecting a list of one of the entities, the user is prompt with one of the following tables shown above.

### Adding new data to a entity:

Filling In Player Attributes	Adding new player to existing list
Enter your choice: 6 Enter player height in cm: 167 Enter player age: 17 Enter player name: jonathan Enter player earnings: 60000 Enter player accolades: nothing Enter player role: sentinel Enter player region: Europe Enter player stats: 1.2 Enter player IGN: Texture Player added successfully.	Enter your choice: 1 1: Tenz 2: Less 3: Demon1 4: Aspas 5: Alfajer 6: Zyppan 7: ZmjjKK 8: f0rsakeN 9: stax 10: yosemite 11: Texture

For example, when adding a new player, the user is prompt with all of these attributes which must be filled out. After all attributes are filled out with the correct data type, a message will appreadt that says “Player has been added successfully”. If a player is added successfully, the player will appear in the player list as the newest playerID.

In the example above we can see that a new player named Texture is added, and in the list on the right we can see that he is added as the 11th playerID.

### This will be similar for adding data to other entities such as:

- Adding a New Team
- Adding a New Coach
- Adding a New Gun
- Adding a New Match

### Common Query Question menu

--- Queries Submenu ---

1. Find the team of a Player
  2. Find the team of a coach
  3. Find the team with the most wins
  4. Find the player with the highest rating
  5. Find the highest paid player
  6. Find the main role of the player
  7. Find the gun price
  8. Find the team with the most losses
  9. Find the team with the highest rank
  10. Find the gun that does the most damage
  11. Return to main menu
- Enter your choice:

If a user decides to view the questions people commonly ask, this is the list of questions which the user can decide to choose from. If none of these questions are of interest to the user, the user may return to the main menu to select other options.

### Selecting Each Query Question

- Find the team of a player

```
Enter your choice: 1
Enter player ID: 1
Team: Sentinals
```

When a user enters the player ID corresponding to the person they're looking for, they will be provided the team that they play for.

- Find the team of a coach

```
Enter your choice: 2
Enter coach ID: 1
The coach with an ID of 1 coaches for team:
- NRG
```

When a user enters the coach ID corresponding to the person they're looking for, they will be provided the team that they coach for.

- Find the team with the most wins

```
Enter your choice: 3
The team with the most wins is Sentinals with 12 wins.
```

If a user selects this query, they will be prompted with the team that has the most wins.

- Find the player with the highest rating

```
Enter your choice: 4
The player with the highest rating is ZmjjKK with a rating of 129.0.
```

If a user selects this query, they will be prompted with the player that has the highest rating.

- Find the highest paid player

```
Enter your choice: 5
The player with the highest earnings is Tenz with earnings of $1250000.
```

If a user selects this query, they will be prompted with the player that earned the most money.

- Find the main role of the player

```
Enter your choice: 6
Enter player IGN: Less
Less (Felipe) plays as a controller.
```

When a user enters the player ign they are looking for, they will be provided the role that they play.

- **Find the gun price**

```
Enter your choice: 7
Enter gun name: vandal
The cost of vandal is $2900.
```

When a user enters the name of a gun, they will be provided the price of that gun.

- **Find the team with the most losses**

```
Enter your choice: 8
The team with the most losses is Sentinals with 9 losses.
```

If the user selects this query, they will be prompted with the team that has the most losses.

- **Find the highest ranked team**

```
Enter your choice: 9
The highest-ranked team is Loud with a ranking of 1.
```

If the user selects this query, the highest ranked team at that current time will be prompted.

- **Find the gun that does the most damage**

```
Enter your choice: 10
The gun with the most damage is operator with a damage of 150.0.
```

If the user selects this query, the gun that does the most damage will be prompted.

As the user updates the table and more matches are played throughout the season, these query questions will change depending on the the frequency of when things r updated.

## SQL DATA BASE TABLES

```
CREATE TABLE "player" (  
    playerID INTEGER PRIMARY KEY AUTOINCREMENT NOT NULL,  
    playerIGN VARCHAR(255),  
    playerHeight REAL,  
    playerAge INTEGER NOT NULL,  
    playerName VARCHAR(255) NOT NULL,  
    playerEarnings INTEGER NOT NULL,  
    playerAccolades VARCHAR(255),  
    playerRole VARCHAR(255) NOT NULL,  
    playerRegion VARCHAR(255) NOT NULL,  
    playerStats REAL NOT NULL  
);
```

```
CREATE TABLE "coach"(  
    coachID INTEGER PRIMARY KEY AUTOINCREMENT NOT NULL,  
    coachName VARCHAR(255) NOT NULL,  
    coachAge INTEGER  
);
```

```
CREATE TABLE "gun"(  
    gunID INTEGER PRIMARY KEY AUTOINCREMENT NOT NULL,  
    gunName VARCHAR(255),  
    gunType VARCHAR(255) NOT NULL,  
    gunCost INTEGER NOT NULL,  
    gunSkin VARCHAR(255),  
    gunDamage REAL NOT NULL  
);
```

```
CREATE TABLE team(  
    teamID INTEGER PRIMARY KEY AUTOINCREMENT NOT NULL,  
    teamName VARCHAR(255) NOT NULL,  
    teamRankings INTEGER,  
    teamAccolades VARCHAR(255),  
    teamLoss INTEGER,  
    teamWin INTEGER,  
    teamStreak INTEGER  
);
```

```
CREATE TABLE TeamMatch(  
    teamID INTEGER,  
    matchID INTEGER,  
    PRIMARY KEY (teamID, matchID),  
    FOREIGN KEY (teamID) REFERENCES team(teamID),  
    FOREIGN KEY (matchID) REFERENCES match(matchID)  
);
```

