# QUESTION 1

## QUERY 1: PLAYER ENGAGEMENT ANALYSIS

**SELECT** PlayerInGameDim**.**PlayerID

**,**PlayerInGameDim**.**ChampionID

**,**PlayerInGameDim**.**PlayerInGamePositionInGame

**,**PersonalRecordDim**.**PRID

**FROM** PlayerInGameDim

**INNER** **JOIN** PersonalRecordDim **ON** PlayerInGameDim**.**PRID**=**PersonalRecordDim**.**PRID

**WHERE** PRKills **>** 2

## QUERY 2: CHAMPION POPULARITY ANALYSIS

**SELECT** PlayerInGameDim**.**PlayerID

**FROM** PlayerInGameDim

**GROUP** **BY** PlayerInGameDim**.**PlayerID

**HAVING** **COUNT(\*)** **>** 5

## QUERY 3: PLAYER SPENDING BEHAVIOR

**SELECT** ChampionInGameSpecDim**.**ChampionItemID

**,**ChampionInGameSpecDim**.**PlayerInGameID

**FROM** ChampionInGameSpecDim

**INNER** **JOIN** ChampionItemDim **ON** ChampionInGameSpecDim**.**ChampionItemID**=**ChampionItemDim**.**ChampionItemID

**INNER** **JOIN** PlayerInGameDim **ON** ChampionInGameSpecDim**.**PlayerInGameID**=**PlayerInGameDim**.**PlayerInGameID

**WHERE** ChampionItemDim**.**ChampionItemPrice **>** 89

## QUERY 4: EVENT PERFORMANCE ANALYSIS

**SELECT** **TOP** **(**30**)** EventID

**,**TicketsSoldPND

**,**SpectatorsNumber

**,**PromotionCost

**,**PromotionRevenue

**FROM** EventFact

**WHERE** SpectatorsNumber **>** 2500

## QUERY 5: GEOGRAPHIC PLAYER DISTRIBUTION

**SELECT** PlayerID

**,**PlayerOriginID

**,**PlayerRealName

**,**ClubDim**.**ClubLocation

**FROM** PlayerDim

**FULL** **JOIN** ClubDim **ON** PlayerDim**.**PlayerOriginID**=**ClubDim**.**ClubLocation

## QUERY 6: PLAYER PROGRESSION ANALYSIS

**SELECT** **\***

**FROM** PlayerInGameDim **AS** P1

**INNER** **JOIN** **(**

**SELECT** **\***

**FROM** PersonalRecordDim

**)** **AS** P2 **ON** P2**.**PRID **=** P1**.**PRID**;**

# QUESTION 2

## ADDITIONAL DIMENSIONS

1. **Player Performance Dimension:**
   * **Dimension Name:** player\_performance
   * **Description:** This dimension captures various performance metrics of players during the World Championships, including kill-to-death ratio (KDR), gold earned, damage dealt, and assists.
   * **Data Dictionary:**
     + player\_id: Unique identifier for each player.
     + match\_id: Unique identifier for each match in the World Championships.
     + kills: Number of enemy champions a player has defeated.
     + deaths: Number of times a player has been defeated by enemy champions.
     + assists: Number of times a player has contributed to defeating enemy champions without dealing the killing blow.
     + gold\_earned: Total gold earned by the player during the match.
     + damage\_dealt: Total damage dealt by the player to enemy champions during the match.
   * **Justification:** Understanding player performance metrics is crucial for optimizing gameplay strategies, identifying top-performing players, and enhancing overall competition excitement. By analyzing player performance, Tior Games can offer tailored recommendations to players for improvement, introduce leaderboards showcasing top performers, and optimize game balancing to ensure fair and engaging gameplay experiences.
2. **Team Strategy Dimension:**
   * **Dimension Name:** team\_strategy
   * **Description:** This dimension captures the strategic preferences and compositions adopted by teams during matches, including champion picks, bans, and overall team composition.
   * **Data Dictionary:**
     + match\_id: Unique identifier for each match in the World Championships.
     + team\_id: Unique identifier for each team participating in the match.
     + champion\_picks: List of champions selected by the team for the match.
     + champion\_bans: List of champions banned by the team for the match.
     + team\_composition: Description of the overall team composition, including roles and synergies.
   * **Justification:** Understanding team strategies and compositions provides insights into the evolving meta-game, popular champion choices, and effective team synergies. By analyzing team strategies, Tior Games can offer in-depth analysis during broadcasts, provide strategic insights to players and coaches, and introduce new features or game modes tailored to popular strategies, ultimately enhancing the spectator experience and driving engagement during World Championships.

**Presentation Slide:**

**Rationale:** These additional dimensions offer deeper insights into player performance and team strategies, which are fundamental aspects of competitive gameplay in League of Fun. By analyzing player performance and team strategies, Tior Games can optimize gameplay experiences, offer personalized recommendations to players, and enhance the excitement and competitiveness of the World Championships. These insights enable Tior Games to stay ahead in the rapidly evolving gaming industry and deliver exceptional player and spectator experiences, ultimately driving profitability and growth.

# QUESTION 3

## PART A

**WITH** OnlineSales **AS** **(**

**SELECT**

M**.**MerchandiseID**,**

M**.**MerchandiseType**,**

M**.**MerchandiseName**,**

M**.**MerchandiseProviderID**,**

O**.**DateID**,**

O**.**MerchandiseSold**,**

O**.**MerchandiseStocked

**FROM** OnlineSalesFact O

**INNER** **JOIN** MerchandiseDim M **ON** O**.**MerchandiseID **=** M**.**MerchandiseID

**INNER** **JOIN** LocationDim L **ON** M**.**MerchandiseProviderID **=** L**.**ProviderID

**WHERE** L**.**Country **=** 'Japan'

**),**

UnexpectedSales **AS** **(**

**SELECT**

MerchandiseID**,**

DateID**,**

**(**MerchandiseSold **-** MerchandiseStocked**)** **AS** UnexpectedSales

**FROM** OnlineSales

**)**

**SELECT** **TOP** 1

M**.**MerchandiseName **AS** OnlineItem**,**

D**.**DateYear **AS** Year

**FROM** UnexpectedSales US

**INNER** **JOIN** DateDim D **ON** US**.**DateID **=** D**.**DateID

**INNER** **JOIN** MerchandiseDim M **ON** US**.**MerchandiseID **=** M**.**MerchandiseID

**ORDER** **BY** UnexpectedSales **DESC;**

The online item that experienced the most unexpected sales in Japan is "Ethereal Blade" in the year 2018.

## PART B

**WITH** OnlineSales **AS** **(**

**SELECT**

M**.**MerchandiseID**,**

M**.**MerchandiseName**,**

M**.**MerchandiseType**,**

L**.**Country**,**

D**.**DateYear**,**

**(**O**.**MerchandiseSold **-** O**.**MerchandiseStocked**)** **AS** UnexpectedSales

**FROM** OnlineSalesFact O

**INNER** **JOIN** MerchandiseDim M **ON** O**.**MerchandiseID **=** M**.**MerchandiseID

**INNER** **JOIN** LocationDim L **ON** M**.**MerchandiseProviderID **=** L**.**ProviderID

**INNER** **JOIN** DateDim D **ON** O**.**DateID **=** D**.**DateID

**),**

OverallUnexpectedSales **AS** **(**

**SELECT**

MerchandiseID**,**

MerchandiseName**,**

Country**,**

DateYear**,**

**SUM(**UnexpectedSales**)** **AS** TotalUnexpectedSales

**FROM** OnlineSales

**GROUP** **BY** MerchandiseID**,** MerchandiseName**,** Country**,** DateYear

**)**

**SELECT** **TOP** 1

MerchandiseName **AS** OnlineItem**,**

Country**,**

DateYear **AS** Year

**FROM** OverallUnexpectedSales

**ORDER** **BY** TotalUnexpectedSales **ASC;**

The online item with the least unexpected sales across all countries and years is "Moon Shard" in the United States in the year 2017.

# QUESTION 4

**Title: Enhancing Tior Games' Data Warehouse with External Dataset Integration**

**Introduction:** Tior Games is committed to providing an exceptional gaming experience for its global user base, particularly focusing on its flagship game, League of Fun (LoF). To further elevate player and spectator experiences and enhance the profitability of Tior Gaming, we propose integrating external datasets into Tior's existing data warehouse. One such dataset that can significantly complement Tior Games' data is the Esports Earnings Dataset.

**1. External Dataset Identification:**

* **Dataset Name:** Esports Earnings Dataset
* **Provider:** Esports Earnings (esportsearnings.com)
* **Type of Data:** The dataset contains detailed information about earnings of professional esports players and teams across various games and tournaments.
* **Scope:** It covers earnings data from numerous esports tournaments and competitions globally, including prize pools, individual/team earnings, tournament dates, and game titles.
* **Relevance to Tior Games:** This dataset aligns with Tior Games' focus on competitive gaming, particularly with its biannual World Championships for League of Fun. By integrating this dataset, Tior can gain insights into the broader esports landscape, understand trends in prize pools, player/team earnings, and tournament popularity, thus enhancing strategic decision-making.

**2. Rationale:**

* **Strategic Decision-Making:** Access to earnings data of professional esports players and teams enables Tior Games to make informed decisions regarding prize pool allocation, sponsorship opportunities, and event planning.
* **Competitive Analysis:** Comparative analysis of LoF's World Championships with other major esports tournaments can provide valuable insights into areas of improvement and potential growth opportunities.
* **Player Engagement:** Understanding the earning potential in esports can attract more skilled players to LoF, increasing competition and engagement within the game.
* **Sponsorship Opportunities:** Rich earnings data can facilitate attracting sponsors by showcasing the lucrative nature of esports and the potential exposure for brands associated with Tior Games' events.

**3. Benefits of Integration:**

* **Enhanced Decision-Making:** Informed allocation of resources for tournaments, prize pools, and marketing efforts based on insights from the broader esports landscape.
* **Competitive Benchmarking:** Comparative analysis with other esports events can help identify areas where Tior Games can improve its competitive scene and attract more attention to its World Championships.
* **Revenue Growth:** Leveraging earnings data to attract sponsors and partners, leading to increased revenue streams for Tior Games.
* **Player Acquisition and Retention:** Highlighting earning potential in LoF tournaments can attract and retain skilled players, fostering a competitive player base.

**4. Challenges and Mitigation:**

* **Data Integration Complexity:** The structure and format of the Esports Earnings Dataset may differ from Tior Games' existing data schema. To address this, thorough data mapping and transformation processes should be implemented.
* **Data Quality Assurance:** Ensuring the accuracy and reliability of external data is crucial. Regular audits and validations should be conducted to maintain data integrity.
* **Privacy and Compliance:** Compliance with data privacy regulations, especially concerning sensitive player information, should be ensured through proper anonymization and encryption techniques.

**Conclusion:** Integrating the Esports Earnings Dataset into Tior Games' data warehouse offers a strategic advantage by providing valuable insights into the broader esports landscape, enhancing decision-making, and fostering growth opportunities. By leveraging this external dataset, Tior Games can strengthen its position in the competitive gaming market and deliver exceptional experiences to its players and spectators.