

# SAVAGE

The next best MOBA developed by Q&A, Inc.

## **Summary**

With the popularity Multiplayer Online Battle Arena (MOBA) games, Q&A, Inc. (Q&A) has been developing their first MOBA called Savage, to launch in the fourth quarter of this year. Q&A conducted a benchmark study and found that the most popular and successful MOBAs have very well-structured databases to handle the enormous amount of data. To meet the timeline of the game launch, a cross functional team will use entities and relationships to develop a conceptual and logical model for their database. By the end of the first quarter the cross functional team will at a minimum define and present the following to the stakeholders: the business rules, a glossary for the data, and a set of questions we expect the database to answer. At the conclusion of the presentation the stakeholders will need to approve the models in order for the team to begin the process of implementing the database.

## **Stakeholders**

- CEO and Upper Management of Q&A, Inc.
- Online Gamers
- Software Engineers
- Marketing Firm
- Investors
- Cloud Provider

- Identity Protection Consultant
- Entertainment Software Rating Board

## **Glossary**

A **gamer** is an individual that access and plays the MOBA.

A **game character** is one of many selectable characters in the MOBA that a Gamer can play as.

MOBA has three **game modes** that gamers can choose to play in with a team: Gladiator, Skirmish, or Domination.

- **Gladiator** is a five versus five Team battle to eliminate all the enemies of the opposing team with no time limit.
- **Skirmish** is a three versus three Team battle to capture the opposing team's headquarters in a small defined map with no time limit.
- **Domination** is a four versus four Team battle to capture the opposing team's headquarters in larger defined map with no time limit.

**Game equipment** may or may not be equipped on a game character during game play, and the game equipment is either offensive or defensive.

- **Offensive** is equipment that a gamer can equip on their game character that can improve any of their offensive stats: Power, Penetration, or Speed.

- **Defensive** is equipment that a gamer can equip on their game character that can improve any of their defensive stats: Physical Protection, Magical Protection, or CCR Protection.

A **sponsor** is an organization that chooses to make a monetary contribution to a gamer and/or a tournament in exchange for promoting the sponsors product or service.

The **sponsor address** is the address where the sponsor resides.

A **in game purchase** is a monetary transaction a gamer can make with a valid credit card to acquire new in game content released by Q&A, Inc. if they want to.

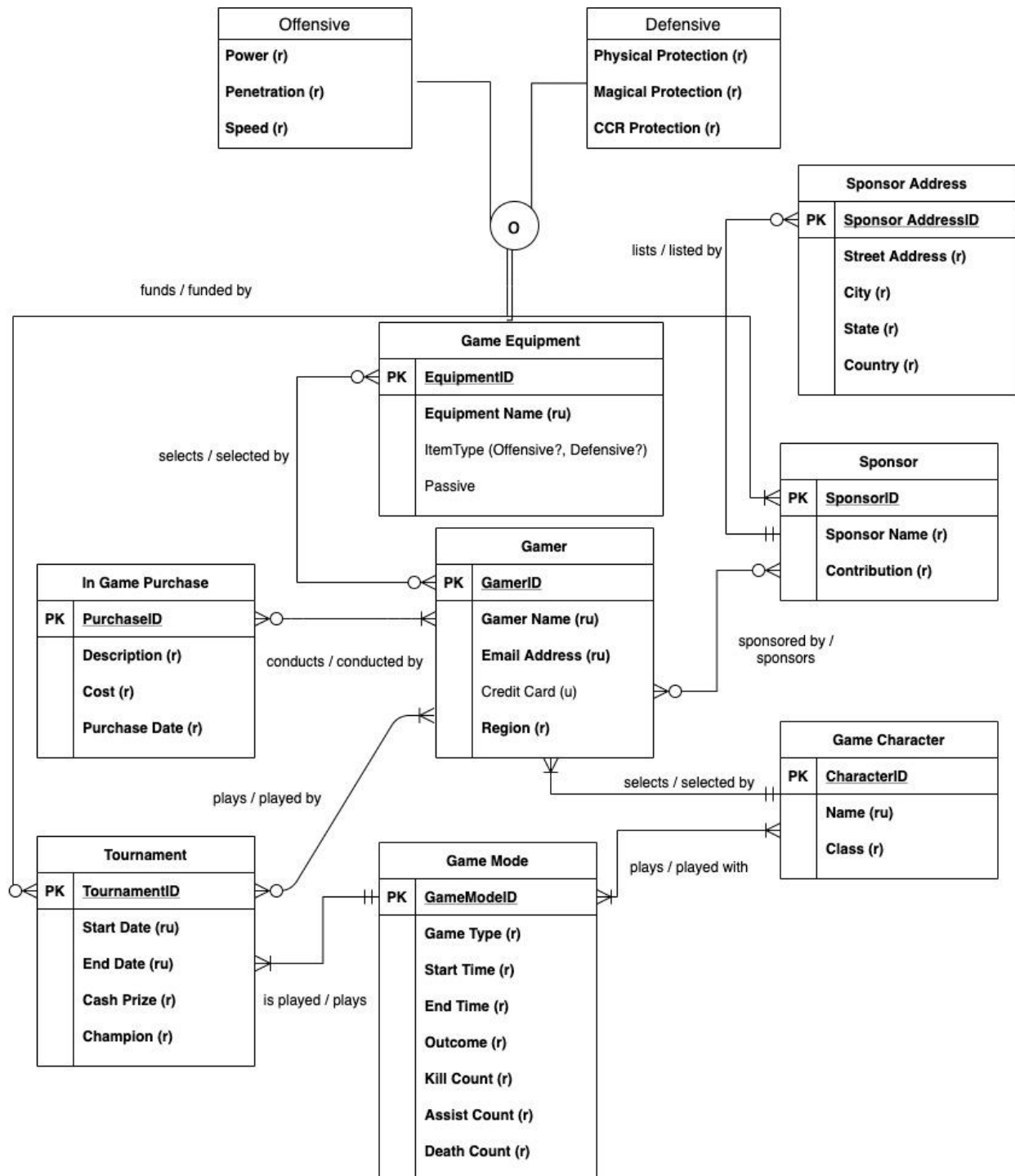
A **tournament** is a sponsored event where multiple gamers compete in the Domination mode for a cash prize.

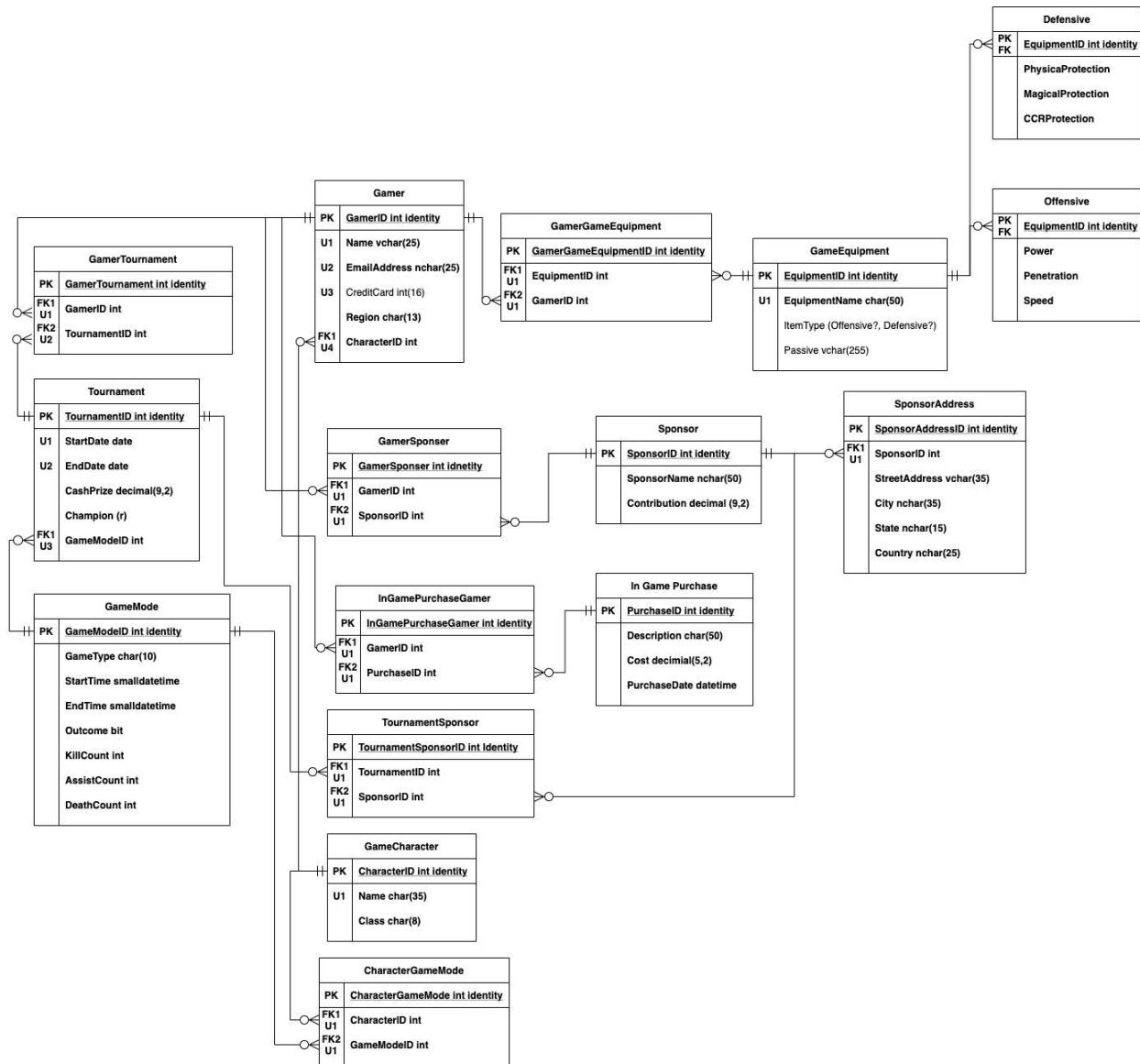
### **Business Rules**

- It is required that a gamer have a unique user ID and email address.
- The gamer must choose one game character from the many game characters before a match can start.
- The gamer must choose one of the three game modes to play a game.
- The gamer may or may not choose to equip their game character with one or many offensive equipment.
- The gamer may or may not choose to equip their game character with one or many defensive equipment.
- A gamer may or may not purchase additional in-game content.

- A valid credit card is required for the purchase of in-game content.
- A tournament can only have one team as a winner, no ties.
- A tournament must have a least one sponsor.
- The Domination game mode is the only mode used for a tournament.
- A sponsor must have a street address and not a Post Office box address.

## Conceptual Model





To validate the MOBA database will meet the expectations of the stakeholders, the cross functional team constructed a set of questions out of the conversations they had with our stakeholders. Below are five questions that we expect to answer from the MOBA database:

1. What has been the most and least popular game character over the last 10 tournaments?

2. What are the top three grossing in-game purchases at the end of each quarter?
3. What is the percentage break down of a game character class played by a specific gamer?
4. What is the most selected offensive and defensive item for a particular game character?
5. What is the probability a specific gamer will win the tournament?

### Raw Data Sample

The Q&A software team released the beta version of Savage to a small group of Gamers for testing in the second Quarter. Below is a sample of the raw data that will be collected by the database.

The screenshot displays a game interface with a scoreboard and player statistics. The top bar shows a timer at 00:39 and a player's name, Alexpsu79, with a score of 535 and a gold count of 177,835. The main scoreboard is divided into two sections: TEAM and ENEMIES. Each section lists players with their names, scores, and various statistics (K, D, A, GOLD, RELICS, ITEMS). The TEAM section shows players GANESHA, AGNI, HORUS, SKADI, and PELLE. The ENEMIES section shows players RAJIN, TSUKUYOMI, JANUS, ARTEMIS, and ACHILLES. The bottom of the screen features a navigation bar with buttons for Select, Back, and other game controls.

TEAM	K	D	A	GOLD	RELICS	ITEMS
20 GANESHA Alexpsu79	0	6	28	14,408		
20 AGNI real_asian	10	7	13	15,086		
20 HORUS Artiss35	6	6	16	15,217		
20 SKADI Ville_Mentalhy3	4	4	13	14,375		
20 PELLE Zspork	16	5	11	17,310		
<b>TOTALS</b>	<b>36</b>	<b>28</b>	<b>81</b>	<b>76,996</b>		

ENEMIES	K	D	A	GOLD	RELICS	ITEMS
20 RAJIN Resistance_7	8	3	15	16,397		
20 TSUKUYOMI SoYouMad	6	11	8	14,863		
20 JANUS NoGutzNoGlory55	3	9	17	14,472		
20 ARTEMIS Zayyy_2	5	6	15	14,497		
20 ACHILLES SFSEAGLE	6	7	17	15,803		
<b>TOTALS</b>	<b>28</b>	<b>36</b>	<b>72</b>	<b>76,032</b>		



## Savage Physical Database

The New Gamer Registration form created in Access will be used to log the Gamers information for the Savage Beta release.

## Gamer Registration

Create a Gamer Name	<input style="width: 90%;" type="text" value="AlexPSU79"/>
Enter a Email Address	<input style="width: 90%;" type="text" value="Rahma.Sheridan@mymail.xyz"/>
Enter a valid Credit Card	<input style="width: 90%;" type="text" value="5183796293774880"/>
Enter your Region	<input style="width: 90%;" type="text" value="Asia"/>



```

-- Drop NewGamer procedure
DROP PROCEDURE IF EXISTS dbo.NewGamer
GO

-- Drop CreditCardUpdate procedure
DROP PROCEDURE IF EXISTS dbo.CreditCardUpdate
GO

--Drop Tables
DROP TABLE IF EXISTS GamerGameEquipment
GO

DROP TABLE IF EXISTS GamerSponsor
GO

DROP TABLE IF EXISTS InGamePurchaseGamer
GO

DROP TABLE IF EXISTS TournamentSponsor
GO

DROP TABLE IF EXISTS CharacterGameMode
GO

DROP TABLE IF EXISTS GamerTournament
GO

DROP TABLE IF EXISTS SponsorAddress
GO

DROP TABLE IF EXISTS Sponsor
GO

DROP TABLE IF EXISTS Defensive
GO

DROP TABLE IF EXISTS Offensive
GO

DROP TABLE IF EXISTS GameEquipment
GO

DROP TABLE IF EXISTS InGamePurchase
GO

DROP TABLE IF EXISTS GameCharacter
GO

DROP TABLE IF EXISTS Tournament
GO

DROP TABLE IF EXISTS GameMode
GO

DROP TABLE IF EXISTS Gamer
GO

--Drop all views

```

```

DROP VIEW IF EXISTS CharacterBreakDown
GO

DROP VIEW IF EXISTS QuarterSales
GO

--Drop all my function statements
DROP FUNCTION IF EXISTS dbo.Warrior
GO

DROP FUNCTION IF EXISTS dbo.Assassin
GO

DROP FUNCTION IF EXISTS dbo.Mage
GO

DROP FUNCTION IF EXISTS dbo.Hunter
GO

DROP FUNCTION IF EXISTS dbo.Guardian
GO

DROP FUNCTION IF EXISTS dbo.WinProbability
GO
-- Create Gamer table
CREATE TABLE Gamer(
    -- Columns in Gamer table
    GamerID int identity,
    GamerName varchar (25) not null,
    EmailAddress nchar(35) not null,
    CreditCard varchar(16),
    Region char(13) not null,
    -- Constraints in Gamer table
    CONSTRAINT PK1_GamerID PRIMARY KEY (GamerID),
    CONSTRAINT U1_GamerName UNIQUE (GamerName),
    CONSTRAINT U2_EmailAddress UNIQUE (EmailAddress),
    CONSTRAINT U3_CreditCard UNIQUE (CreditCard)
)
GO

-- Create Game Mode table
CREATE TABLE GameMode(
    -- Columns in Game Mode table
    GameModeID int identity,
    GameType char(10) not null,
    StartTime smalldatetime not null,
    EndTime smalldatetime not null,
    Wins bit not null,
    Losses bit not null,
    KillCount int not null,
    AssistCount int not null,
    DeathCount int not null,
    -- Constraint in Game Mode table
    CONSTRAINT PK1_GameModeID PRIMARY KEY (GameModeID)
)
GO

-- Create Tournament table

```

```

CREATE TABLE Tournament(
    -- Column in Tournament table
    TournamentID int identity,
    CashPrize decimal (9,2) not null,
    GameModeID int not null,
    -- Constraint in Tournament table
    CONSTRAINT PK1_Tournament PRIMARY KEY (TournamentID),
    CONSTRAINT FK1_Tournament FOREIGN KEY (GameModeID) REFERENCES GameMode(GameModeID)
)
GO

-- Create Game Character table
CREATE TABLE GameCharacter(
    -- Columns in Game Character table
    CharacterID int identity,
    CharacterName char(35) not null,
    Class char(8)
    -- Constraints in Game Character table
    CONSTRAINT PK1_CharacterID PRIMARY KEY (CharacterID),
    CONSTRAINT U1_CharacterName UNIQUE (CharacterName),
)
GO

-- Create In Game Purchase table
CREATE TABLE InGamePurchase (
    -- Columns in In Game Purchse table
    PurchaseID int identity,
    PurchaseDescription char(50) not null,
    Cost decimal (9,2) not null,
    PurchaseDate datetime not null,
    -- Constraint in In Game Purchase table
    CONSTRAINT PK1_PurchaseID PRIMARY KEY (PurchaseID)
)
GO

-- Create Game Equipment table
CREATE TABLE GameEquipment (
    -- Columns in Game Equipment table
    EquipmentID int identity,
    EquipmentName char(50) not null,
    ItemType char (9) not null,
    Passive varchar(255)
    -- Constraint in Game Equipment table
    CONSTRAINT PK1_EquipmentID PRIMARY KEY (EquipmentID),
    CONSTRAINT U1_EquipmentName UNIQUE (EquipmentName)
)
GO

-- Create Offensive table
CREATE TABLE Offensive(
    -- Columns in Offensive table
    EquipmentID int,
    EquipmentPower int,
    Penetration int,
    Speed int,
    -- Constraint in Offensive table
    CONSTRAINT PK2_EquipmentID PRIMARY KEY (EquipmentID),

```

```

        CONSTRAINT FK1_EquipmentID FOREIGN KEY (EquipmentID) REFERENCES
GameEquipment(EquipmentID)
    )
GO

-- Create Defensive table
CREATE TABLE Defensive(
    -- Columns in Defensive table
    EquipmentID int,
    PhysicalProtection int,
    MagicalProtection int,
    CCRProtection int,
    -- Constraint in Defensive table
    CONSTRAINT PK3_EquipmentID PRIMARY KEY (EquipmentID),
    CONSTRAINT FK1_Defensive FOREIGN KEY (EquipmentID) REFERENCES
GameEquipment(EquipmentID)
    )
GO

-- Create Sponsor table
CREATE TABLE Sponsor(
    --Columns in Sponsor table
    SponsorID int identity,
    SponsorName nchar(50) not null,
    Contribution decimal (9,2) not null,
    --Constraint in Sponsor table
    CONSTRAINT PK1_SponsorID PRIMARY KEY (SponsorID)
    )
GO

-- Create Sponsor Address table
CREATE TABLE SponsorAddress(
    -- Columns in Sponsor Address table
    SponsorAddressID int identity,
    SponsorID int,
    StreetAddress varchar(35) not null,
    City nchar(35) not null,
    AddressState nchar(35) not null,
    Country nchar(25) not null,
    -- Constraints in Sponsor Address table
    CONSTRAINT PK1_SponsorAddressID PRIMARY KEY (SponsorAddressID),
    CONSTRAINT FK1_SponsorAddress FOREIGN KEY (SponsorID) REFERENCES
Sponsor(SponsorID)
    )
GO

-- Create Gamer Tournament table
CREATE TABLE GamerTournament(
    -- Column in Game Tournament table
    GamerTournamentID int identity,
    GamerID int not null,
    TournamentID int not null,
    -- Constraint in Game Tournament table
    CONSTRAINT PK1_GamerTournamentID PRIMARY KEY (GamerTournamentID),
    CONSTRAINT FK1_GamerTournament FOREIGN KEY (GamerID) REFERENCES Gamer(GamerID),
    CONSTRAINT FK2_GamerTournament FOREIGN KEY (TournamentID) REFERENCES
Tournament(TournamentID)
    )

```

GO

```
-- Create Character Game Mode table
CREATE TABLE CharacterGameMode (
    -- Columns in Character Game Mode table
    CharacterGameModeID int identity,
    CharacterID int not null,
    GameModeID int not null,
    -- Constraints in Character Game Mode table
    CONSTRAINT PK1_CharacterGameMode PRIMARY KEY (CharacterGameModeID),
    CONSTRAINT FK1_CharacterGameMode FOREIGN KEY (CharacterID) REFERENCES
GameCharacter(CharacterID),
    CONSTRAINT FK2_CharacterGameMode FOREIGN KEY (GameModeID) REFERENCES
GameMode(GameModeID)
)
GO
```

```
-- Create Tournament Sponsor table
CREATE TABLE TournamentSponsor(
    -- Columns in Tournament Sponsor table
    TournamentSponsorID int identity,
    TournamentID int not null,
    SponsorID int not null,
    -- Constraint in Tournament Sponsor table
    CONSTRAINT PK1_TournamentSponsorID PRIMARY KEY (TournamentSponsorID),
    CONSTRAINT FK1_TournamentSponsor FOREIGN KEY (TournamentID) REFERENCES
Tournament(TournamentID),
    CONSTRAINT FK2_TournamentSponsor FOREIGN KEY (SponsorID) REFERENCES
Sponsor(SponsorID)
)
GO
```

```
-- Create In Game Purchase Gamer table
CREATE TABLE InGamePurchaseGamer(
    -- Columns in In Game Purchase Gamer table
    InGamePurchaseGamerID int identity,
    GamerID int not null,
    PurchaseID int not null,
    -- Constraint in In Game Purchase Gamer table
    CONSTRAINT PK1_InGamePurchaseGamerID PRIMARY KEY (InGamePurchaseGamerID),
    CONSTRAINT FK1_InGamePurchaseGamer FOREIGN KEY (GamerID) REFERENCES
Gamer(GamerID),
    CONSTRAINT FK2_InGamePurchaseGamer FOREIGN KEY (PurchaseID) REFERENCES
InGamePurchase(PurchaseID)
)
GO
```

```
-- Create Gamer Sponsor table
CREATE TABLE GamerSponsor(
    --Columns in Gamer Sponsor table
    GamerSponsorID int identity,
    GamerID int not null,
    SponsorID int not null,
    -- Constraints in Gamer Sponsor table
    CONSTRAINT PK1_GamerSponsorID PRIMARY KEY (GamerSponsorID),
    CONSTRAINT FK1_GamerSponsor FOREIGN KEY (GamerID) REFERENCES Gamer(GamerID),
    CONSTRAINT FK2_GamerSponsor FOREIGN KEY (SponsorID) REFERENCES Sponsor(SponsorID)
)
)
```

GO

```
-- Create Gamer Game Equipment table
CREATE TABLE GamerGameEquipment (
    -- Columns in Gamer Game Equipment table
    GamerGameEquipmentID int identity,
    EquipmentID int not null,
    GamerID int not null,
    -- Constraints in Gamer Game Equipment table
    CONSTRAINT PK1_GamerGameEquipment PRIMARY KEY (GamerGameEquipmentID),
    CONSTRAINT FK1_GamerGameEquipment FOREIGN KEY (EquipmentID) REFERENCES
GameEquipment(EquipmentID),
    CONSTRAINT FK2_GamerGameEquipment FOREIGN KEY (GamerID) REFERENCES Gamer(GamerID)
)
```

GO

```
-- Insert data into Gamer table
```

```
INSERT INTO Gamer(GamerName, EmailAddress, CreditCard, Region)
VALUES ('LinesofChaos', 'Efe.Luna@mymail.xy', '5581436088576110', 'North
America'),
('John2Tymes', 'Sol.Smyth@mymail.xyz', '5236609431366340', 'South America'),
('AlexPSU79', 'Rahma.Sheridan@mymail.xyz', '5183796293774880', 'Asia'),
('King_Pain', 'Braydon.Wagner@mymail.xyz', '5200136813258580', 'North America'),
('VG Chewy', 'Luke.Cox@mymail.xyz', '5111825775276190', 'North America'),
('Iambigdamage', 'Yvette.Kline@mymail.xyz', '4556363084412060', 'Asia'),
('ItsMrJoker', 'Daniele.Frost@mymail.xyz', '4929245366652930', 'Asia'),
('BigRed748', 'Kathryn.Monaghan@mymail.xyz', '4024007172191520', 'Africa'),
('Don FunnyMan', 'Hollie.Bate@mymail.xyz', '4929616554375540', 'North America'),
('Drop_Dead24', 'Jadine.Kaye@mymail.xyz', '4485727116748420', 'South America'),
('iamcoyson', 'Jake.Johns@mymail.xyz', '346776571462041', 'North America'),
('kid 4 show', 'Adam.McLellan@mymail.xyz', '346493544223415', 'Africa'),
('NightNija21', 'Mehdi.Blankenship@mymail.xyz', '344942544485178', 'Europe'),
('Platano4Life', 'Miguel.Carr@mymail.xyz', '376788231100732', 'Asia'),
('SnooBen21', 'Huw.Rosas@mymail.xyz', '344768498204061', 'Africa')
```

GO

```
-- Read rows from Gamer Table
```

```
SELECT * FROM Gamer
```

GO

```
-- Insert data into Game Character table
```

```
INSERT INTO GameCharacter (CharacterName, Class)
VALUES ('Zeus', 'Guardian'), ('Wolverine', 'Hunter'), ('Cyclops', 'Mage'),
('Frodo', 'Guardian'), ('Loki', 'Mage'), ('Deadpool', 'Assassin'),
('Luffy', 'Assassin'), ('Naurato', 'Assassin'), ('Sanji', 'Warrior'),
('Hera', 'Warrior'), ('Nike', 'Assassin'), ('Zorro', 'Guardian'),
('Hulk', 'Hunter'), ('Sonic', 'Assassin'), ('Donkey Kong', 'Hunter')
```

GO

```
-- Read rows from Game Character table
```

```
SELECT * FROM GameCharacter
```

GO

```
-- Insert data into Sponsor table
```

```
INSERT INTO Sponsor (SponsorName, Contribution)
VALUES ('Eco Focus', 2458183.00), ('Innovation Arch', 952541.00), ('Strat
Security', 713497.00),
('Inspire Fitness Co', 833449.00), ('Candor Corp', 1286274.00)
```

GO

```

-- Read rows in Sponsor table
SELECT * FROM Sponsor
GO

-- Insert data into SponsorAddress (SELECT SponsorID FROM Sponsor WHERE SponsorName =
'Admire Arts')
INSERT INTO SponsorAddress (SponsorID, StreetAddress, City, AddressState, Country)
VALUES ((SELECT SponsorID FROM Sponsor WHERE SponsorName = 'Eco
Focus'), 'Morsbroicher Street. 76b', 'Nord Ecrinstadt', 'Mecklenburg-Vorpommern',
'Germany'),
((SELECT SponsorID FROM Sponsor WHERE SponsorName = 'Innovation Arch'), 'Von-Knoeringen-
Street. 71a', 'Pohlandstadt', 'Mecklenburg-Vorpommern', 'Germany'),
((SELECT SponsorID FROM Sponsor WHERE SponsorName = 'Strat Security'), 'Contrada Nicodemo
33', 'Keyaish', 'Avellino', 'Italy'),
((SELECT SponsorID FROM Sponsor WHERE SponsorName = 'Inspire Fitness Co'), '76105 Olson
Street', 'Kirstenshire', 'Pennsylvania', 'United States'),
((SELECT SponsorID FROM Sponsor WHERE SponsorName = 'Candor Corp'), 'Joeykade 043b',
'Tjoenebroek', 'Overijssel', 'Netherlands')
GO

-- Read rows in SponsorAddress table
SELECT * FROM SponsorAddress
GO

-- Insert data into In Game Purchase table
INSERT INTO InGamePurchase (PurchaseDescription, Cost, PurchaseDate)
VALUES('Gem Sale', 12.00, '4/16/2020 04:05:12'), ('Gem Sale', 18.00, '6/23/2020
14:29:21'),
('Character Skin', 8.00, '5/5/2020 02:45:22'), ('Gift Card', 11.00, '4/24/2020
17:02:34'),
('Gem Sale', 25.00, '4/5/2020 08:50:21'), ('Avatar Items', 7.00, '5/23/2020 19:49:35'),
('Expansion Pack Sale', 10.00, '5/24/2020 15:56:09'), ('Expansion Pack Sale', 11.00,
'9/3/2020 03:46:35'),
('New Map', 12.00, '9/15/2020 22:38:38'), ('New Map', 14.00, '8/16/2020 01:06:34'),
('Expansion Pack Sale', 16.00, '8/8/2020 23:35:29'), ('Avatar Items', 16.00,
'7/13/2020 17:45:53'),
('Avatar Items', 24.00, '8/9/2020 00:39:41'), ('New Map', 6.00, '8/24/2020 23:52:32'),
('Character Skin', 22.00, '12/10/2020 12:15:56'), ('New Game Character', 15.00,
'12/17/2020 04:36:25'),
('Character Skin', 8.00, '12/28/2020 16:12:57'), ('Expansion Pack Sale', 6.00, '12/2/2020
20:47:40'),
('New Game Character', 12.00, '11/2/2020 10:11:37'), ('Gift Card', 12.00, '12/13/2020
10:33:08'),
('Character Skin', 6.00, '11/28/2020 00:45:54')
GO

-- Read rows in In Game Purchase table
SELECT * FROM InGamePurchase
GO

-- Insert data into GameMode
INSERT INTO GameMode(GameType, Wins, Losses, StartTime, EndTime, KillCount, AssistCount,
DeathCount)
VALUES('Skirmish', 'TRUE', 'FALSE', '2/3/2021 6:19:10 PM', '2/3/2021 6:51:10 PM',
9, 22, 10),
('Domination', 'FALSE', 'TRUE', '12/31/2020 2:43:02 AM', '12/31/2020 3:21:02 AM', 2,
8, 6),

```

('Gladiator', 'TRUE', 'FALSE', '11/28/2020 3:31:15 AM', '11/28/2020 3:47:15 AM',  
 10, 10, 24),  
 ('Gladiator', 'TRUE', 'FALSE', '10/17/2020 4:25:50 AM', '10/17/2020 5:00:50 AM',  
 25, 3, 13),  
 ('Gladiator', 'FALSE', 'TRUE', '2/13/2021 8:12:59 AM', '2/13/2021 8:34:59 AM', 17,  
 22, 25),  
 ('Gladiator', 'TRUE', 'FALSE', '12/20/2020 1:56:48 PM', '12/20/2020 2:23:48 PM', 6,  
 3, 20),  
 ('Domination', 'TRUE', 'FALSE', '11/9/2020 12:28:44 AM', '11/9/2020 1:11:44 AM', 13,  
 17, 1),  
 ('Skirmish', 'TRUE', 'FALSE', '10/12/2020 3:26:04 PM', '10/12/2020 4:09:04 PM', 2,  
 13, 17),  
 ('Skirmish', 'TRUE', 'FALSE', '9/1/2020 4:16:53 PM', '9/1/2020 4:40:53 PM', 12, 2,  
 10),  
 ('Domination', 'FALSE', 'TRUE', '10/10/2020 2:34:56 PM', '10/10/2020 2:52:56 PM', 14,  
 12, 14),  
 ('Skirmish', 'TRUE', 'FALSE', '11/10/2020 2:08:06 PM', '11/10/2020 2:50:06 PM', 6,  
 5, 16),  
 ('Skirmish', 'TRUE', 'FALSE', '11/10/2020 9:11:24 PM', '11/10/2020 9:49:24 PM', 20,  
 5, 6),  
 ('Domination', 'FALSE', 'TRUE', '1/11/2021 1:10:16 AM', '1/11/2021 1:31:16 AM', 18,  
 15, 0),  
 ('Domination', 'TRUE', 'FALSE', '12/19/2020 5:59:35 PM', '12/19/2020 6:25:35 PM', 14,  
 17, 13),  
 ('Domination', 'TRUE', 'FALSE', '12/3/2020 11:09:23 PM', '12/3/2020 11:40:23 PM', 2,  
 19, 15),  
 ('Gladiator', 'FALSE', 'TRUE', '1/16/2021 11:26:06 AM', '1/16/2021 12:09:06 PM', 17,  
 6, 13),  
 ('Domination', 'TRUE', 'FALSE', '1/26/2021 4:15:18 PM', '1/26/2021 4:31:18 PM', 25,  
 7, 19),  
 ('Skirmish', 'TRUE', 'FALSE', '2/9/2021 12:42:06 AM', '2/9/2021 1:08:06 AM', 10,  
 20, 21),  
 ('Gladiator', 'FALSE', 'TRUE', '11/1/2020 9:07:11 AM', '11/1/2020 9:39:11 AM', 20,  
 25, 4),  
 ('Skirmish', 'FALSE', 'TRUE', '12/26/2020 3:56:17 PM', '12/26/2020 4:35:17 PM', 1,  
 7, 7),  
 ('Domination', 'TRUE', 'FALSE', '9/14/2020 4:41:33 AM', '9/14/2020 5:17:33 AM', 4,  
 2, 21),  
 ('Domination', 'FALSE', 'TRUE', '10/17/2020 5:59:32 AM', '10/17/2020 6:15:32 AM', 21,  
 19, 12),  
 ('Skirmish', 'TRUE', 'FALSE', '10/10/2020 11:08:00 PM', '10/10/2020 11:40:00 PM', 20,  
 6, 2),  
 ('Domination', 'FALSE', 'TRUE', '2/27/2021 6:12:10 AM', '2/27/2021 6:35:10 AM', 20,  
 6, 7),  
 ('Skirmish', 'TRUE', 'FALSE', '1/6/2021 3:56:45 AM', '1/6/2021 4:29:45 AM', 23, 15,  
 3),  
 ('Gladiator', 'TRUE', 'FALSE', '10/31/2020 1:42:33 AM', '10/31/2020 2:14:33 AM', 5,  
 8, 8),  
 ('Gladiator', 'FALSE', 'TRUE', '1/10/2021 11:08:41 PM', '1/10/2021 11:35:41 PM', 19,  
 11, 17),  
 ('Gladiator', 'FALSE', 'TRUE', '2/26/2021 6:14:43 AM', '2/26/2021 6:42:43 AM', 5,  
 16, 5),  
 ('Domination', 'FALSE', 'TRUE', '1/24/2021 7:46:53 PM', '1/24/2021 8:22:53 PM', 0,  
 20, 14),  
 ('Domination', 'TRUE', 'FALSE', '10/31/2020 7:38:11 AM', '10/31/2020 8:16:11 AM', 5,  
 18, 2),  
 ('Domination', 'TRUE', 'FALSE', '11/20/2020 4:47:18 AM', '11/20/2020 5:11:18 AM', 12, 24,  
 1),



```

('Domination', 'TRUE', 'FALSE', '12/17/2020 1:22:05 AM', '12/17/2020 2:05:05 AM', 7, 13, 6),
('Domination', 'FALSE', 'TRUE', '1/8/2021 10:58:38 PM', '1/8/2021 11:33:38 PM', 0, 7, 10),
('Domination', 'TRUE', 'FALSE', '1/29/2021 9:14:02 PM', '1/29/2021 9:53:02 PM', 9, 6, 8),
('Domination', 'TRUE', 'FALSE', '2/21/2021 9:41:31 PM', '2/21/2021 10:17:31 PM', 18, 20, 18),
('Domination', 'TRUE', 'FALSE', '12/21/2020 7:41:17 PM', '12/21/2020 8:13:17 PM', 1, 11, 21),
('Domination', 'FALSE', 'TRUE', '11/1/2020 8:51:57 PM', '11/1/2020 9:26:57 PM', 11, 11, 24),
('Domination', 'FALSE', 'TRUE', '11/28/2020 6:55:35 AM', '11/28/2020 7:40:35 AM', 25, 4, 19),
('Domination', 'FALSE', 'TRUE', '10/22/2020 7:26:10 AM', '10/22/2020 8:07:10 AM', 17, 12, 6),
('Domination', 'FALSE', 'TRUE', '10/14/2020 11:24:28 PM', '10/14/2020 11:40:28 PM', 6, 17, 15)
GO

```

```

-- Read rows in Game Mode table
SELECT * FROM GameMode
GO

```

```

-- Insert data into Tournament table
INSERT INTO Tournament (CashPrize, GameModeID)
VALUES (1600529.00, 2), (131875.00, 7),
(1810528.00, 10), (2678057.00, 13), (354010.00, 14), (2458552.00, 15),
(724362.00, 17), (1763711.00, 21), (120400.00, 22), (1469401.00, 24), (290043.00, 29), (2512511.00, 30),
(2070842.00, 31),
(903150.00, 32), (2844248.00, 33), (173610.00, 34), (195665.00, 35), (170703.00, 36), (2793399.00, 37),
(1840479.00, 38)
GO

```

```

-- Read rows in Tournament table
SELECT * FROM Tournament
GO

```

```

-- Insert data into Game Equipment table
INSERT INTO GameEquipment (EquipmentName, ItemType, Passive)
VALUES ('Rod of Smite', 'Offensive', 'Gives the power of smiting your opponent in one hit'),
('Book of Knowledge', 'Offensive', 'Gives you the knowledge to avoid Smite attacks'),
('Hammer of Dawn', 'Defensive', 'Bings down the hammer on the one you target'),
('Boots of Nike', 'Defensive', 'Dunk like Mike'),
('Torque Bow', 'Offensive', 'Improves your snipping ability'),
('Bloodforge', 'Offensive', 'When you need more health just kill a teammate'),
('Vail of Dispair', 'Defensive', 'You think you have it all together, but you do not'),
('Cursed Onk', 'Defensive', 'Oh no, you have cursed your best friend'),
('Shogun Blessing', 'Offensive', 'Gives you the blessing to do whatever you want for 30 seconds'),
('Epic Bow', 'Offensive', 'Slightly better then a Torque Bow')
GO

```

```

-- Read rows in Game Equipement table
SELECT * FROM GameEquipment
GO

```

```

-- Insert data into Defensive table
INSERT INTO Defensive (EquipmentID, PhysicalProtection, MagicalProtection, CCRProtection)

```

```

VALUES(2,20,25,23),(4,8,null,8),(6,11,19,null ),(8,null,1,16),(10,6,21,10)
GO

-- Read rows in Defensive table
SELECT * FROM Defensive
GO

-- Insert data into Offensive table
INSERT INTO Offensive(EquipmentID,EquipmentPower, Penetration,Speed)
VALUES(1,12,17,9),(3,10,17,null),(5,20,null,8 ),(7,13,12,null),(9,12,null,13)
GO

-- Read rows in Offensive table
SELECT * FROM Offensive
GO

-- Insert data into GamerGamerEquipment table
INSERT INTO GamerGameEquipment (EquipmentID, GamerID)
VALUES ((SELECT EquipmentID FROM GameEquipment WHERE EquipmentName = 'Rod of
Smite'),(SELECT GamerID FROM Gamer WHERE GamerName = 'John2Tymes')),
((SELECT EquipmentID FROM GameEquipment WHERE EquipmentName = 'Rod of
Smite'),(SELECT GamerID FROM Gamer WHERE GamerName = 'John2Tymes')),
((SELECT EquipmentID FROM GameEquipment WHERE EquipmentName = 'Rod of
Smite'),(SELECT GamerID FROM Gamer WHERE GamerName = 'AlexPSU79')),
((SELECT EquipmentID FROM GameEquipment WHERE EquipmentName =
'Bloodforge'),(SELECT GamerID FROM Gamer WHERE GamerName = 'AlexPSU79')),
((SELECT EquipmentID FROM GameEquipment WHERE EquipmentName =
'Bloodforge'),(SELECT GamerID FROM Gamer WHERE GamerName = 'LinesofChaos')),
((SELECT EquipmentID FROM GameEquipment WHERE EquipmentName = 'Epic Bow'), (SELECT
GamerID FROM Gamer WHERE GamerName = 'LinesofChaos')),
((SELECT EquipmentID FROM GameEquipment WHERE EquipmentName = 'Hammer of
Dawn'),(SELECT GamerID FROM Gamer WHERE GamerName = 'John2Tymes')),
((SELECT EquipmentID FROM GameEquipment WHERE EquipmentName = 'Hammer of
Dawn'),(SELECT GamerID FROM Gamer WHERE GamerName = 'John2Tymes')),
((SELECT EquipmentID FROM GameEquipment WHERE EquipmentName = 'Hammer of
Dawn'),(SELECT GamerID FROM Gamer WHERE GamerName = 'John2Tymes')),
((SELECT EquipmentID FROM GameEquipment WHERE EquipmentName = 'Cursed
Onk'),(SELECT GamerID FROM Gamer WHERE GamerName = 'AlexPSU79')),
((SELECT EquipmentID FROM GameEquipment WHERE EquipmentName = 'Cursed
Onk'),(SELECT GamerID FROM Gamer WHERE GamerName = 'LinesofChaos')),
((SELECT EquipmentID FROM GameEquipment WHERE EquipmentName = 'Vail of
Dispair'),(SELECT GamerID FROM Gamer WHERE GamerName = 'LinesofChaos'))
GO

-- Read rows in GamerGamerEquipment table
SELECT * FROM GamerGameEquipment
GO

-- Insert data into GamerTournament table
INSERT INTO GamerTournament (GamerID, TournamentID)
VALUES ((SELECT GamerID FROM Gamer WHERE GamerName = 'John2Tymes'),1),
((SELECT GamerID FROM Gamer WHERE GamerName = 'John2Tymes'),2),
((SELECT GamerID FROM Gamer WHERE GamerName = 'John2Tymes'),3),
((SELECT GamerID FROM Gamer WHERE GamerName = 'John2Tymes'),4),
((SELECT GamerID FROM Gamer WHERE GamerName = 'AlexPSU79'),5),
((SELECT GamerID FROM Gamer WHERE GamerName = 'AlexPSU79'),6),
((SELECT GamerID FROM Gamer WHERE GamerName = 'AlexPSU79'),7),

```

```

((SELECT GamerID FROM Gamer WHERE GamerName = 'AlexPSU79'),8),
((SELECT GamerID FROM Gamer WHERE GamerName = 'VG Chewy'),9),
((SELECT GamerID FROM Gamer WHERE GamerName = 'VG Chewy'),10),
((SELECT GamerID FROM Gamer WHERE GamerName = 'VG Chewy'),11),
((SELECT GamerID FROM Gamer WHERE GamerName = 'LinesofChaos'),12),
((SELECT GamerID FROM Gamer WHERE GamerName = 'LinesofChaos'),13),
((SELECT GamerID FROM Gamer WHERE GamerName = 'LinesofChaos'),14),
((SELECT GamerID FROM Gamer WHERE GamerName = 'King_Pain'),15),
((SELECT GamerID FROM Gamer WHERE GamerName = 'King_Pain'),16),
((SELECT GamerID FROM Gamer WHERE GamerName = 'ItsMrJoker'),17),
((SELECT GamerID FROM Gamer WHERE GamerName = 'ItsMrJoker'),18),
((SELECT GamerID FROM Gamer WHERE GamerName = 'iamcoyson'),19),
((SELECT GamerID FROM Gamer WHERE GamerName = 'kid 4 show'),20)

GO

-- Read rows in GamerTournament table
SELECT * FROM GamerTournament
GO

-- Insert data into GamerSponsor table
INSERT INTO GamerSponsor(GamerID, SponsorID)
VALUES (2,4), (10,5), (3,1), (2,3), (9,2)
GO

-- Read rows in GamerSponsor table
SELECT * FROM GamerSponsor
GO

-- Insert data into InGamePurchaseGamer table
INSERT INTO InGamePurchaseGamer(GamerID, PurchaseID)
VALUES (11,8), (2,15), (14,1), (1,12), (14,6)
GO

-- Read rows in InGamePurchaseGamer table
SELECT * FROM InGamePurchaseGamer
GO

-- Insert data into TournamentSponsor table
INSERT INTO TournamentSponsor(TournamentID, SponsorID)
VALUES (1,2), (2,3), (3,2), (4,4), (5,5)
GO

-- Read rows in TournamentSponsor table
SELECT * FROM TournamentSponsor
GO

-- Insert data into CharacterGameMode table
INSERT INTO CharacterGameMode(GameModeID, CharacterID)
VALUES (2,(SELECT CharacterID FROM GameCharacter WHERE CharacterName =
'Deadpool')),
(7,(SELECT CharacterID FROM GameCharacter WHERE CharacterName = 'Hera')),
(10,(SELECT CharacterID FROM GameCharacter WHERE CharacterName = 'Deadpool')),
(13,(SELECT CharacterID FROM GameCharacter WHERE CharacterName = 'Deadpool')),
(14,(SELECT CharacterID FROM GameCharacter WHERE CharacterName = 'Loki')),
(15,(SELECT CharacterID FROM GameCharacter WHERE CharacterName = 'Deadpool')),
(17,(SELECT CharacterID FROM GameCharacter WHERE CharacterName = 'Frodo')),
(21,(SELECT CharacterID FROM GameCharacter WHERE CharacterName = 'Frodo')),
(22,(SELECT CharacterID FROM GameCharacter WHERE CharacterName = 'Sanji')),

```

```

(24,(SELECT CharacterID FROM GameCharacter WHERE CharacterName = 'Sanji')),
(29,(SELECT CharacterID FROM GameCharacter WHERE CharacterName = 'SanJi')),
(30,(SELECT CharacterID FROM GameCharacter WHERE CharacterName = 'Deadpool')),
(31,(SELECT CharacterID FROM GameCharacter WHERE CharacterName = 'Deadpool')),
(32,(SELECT CharacterID FROM GameCharacter WHERE CharacterName = 'Sanji')),
(33,(SELECT CharacterID FROM GameCharacter WHERE CharacterName = 'Loki')),
(34,(SELECT CharacterID FROM GameCharacter WHERE CharacterName = 'Loki')),
(35,(SELECT CharacterID FROM GameCharacter WHERE CharacterName = 'Sonic')),
(36,(SELECT CharacterID FROM GameCharacter WHERE CharacterName = 'Sonic')),
(37,(SELECT CharacterID FROM GameCharacter WHERE CharacterName = 'Hera')),
(38,(SELECT CharacterID FROM GameCharacter WHERE CharacterName = 'Sanji')),
(39,(SELECT CharacterID FROM GameCharacter WHERE CharacterName = 'Luffy')),
(40,(SELECT CharacterID FROM GameCharacter WHERE CharacterName = 'Deadpool'))
GO

-- Read rows in CharacterGameMode table
SELECT * FROM CharacterGameMode
GO

-- Delete the GamerName Pnk Panther to allow for repeatable script using Pnk Panther name
over and over
DELETE FROM Gamer WHERE GamerName = 'Pnk Panther'
GO

/* This procedure is used when a new Gamer registers to play Savage and needs to be
inserted into to the Gamer table
    The first parameter, @gamerName,is the Gamer Name for the new Gamer
    The second parameter, @emailAddress, is the New Gamer's Email Address
    The third parameter, @creditCard, is the New Gamer's Credit Card
    The fourth parameter, @region, is the Region the New Gamer lives
Returns:
    SCOPE_IDENTITY() with the value inserted
*/
CREATE PROCEDURE NewGamer(@gamerName varchar(25), @emailAddress nchar(35),
                        @creditCard varchar(16), @region
char(13)) AS
BEGIN
    INSERT INTO Gamer(GamerName, EmailAddress, CreditCard, Region)
    VALUES (@gamerName, @emailAddress, @creditCard, @region)
    RETURN SCOPE_IDENTITY()
END
GO
DECLARE @newGamerID int

-- Gamer table before adding New Gamer
SELECT * FROM Gamer

-- The new gamer name, emailaddress, card and region
EXEC @newGamerID = NewGamer 'Pnk Panther', 'janedoe@mymail.xyz', '5517608342653934',
'North America';

-- Gamer Table after adding New Gamer
SELECT * FROM Gamer
GO

```

```

/* This procedure is used when the Gamer needs to update their credit card information
   The first parameter, @gamerName, is the GamerName we are updating
   The second parameter, @newCreditCard, is the Gamer's new Credit Card number
*/
CREATE PROCEDURE CreditCardUpdate (@gamerName varchar(25), @newCreditCard varchar(16))
AS
BEGIN
    UPDATE Gamer SET CreditCard = @newCreditCard
    WHERE GamerName = @gamerName
END
GO

--Before the Credit Card update
SELECT
    Gamer.GamerName,
    Gamer.CreditCard
FROM Gamer
WHERE Gamer.GamerName = 'BigRed748'
ORDER BY Gamer.GamerName
GO

-- Updating the Credit Card
EXEC CreditCardUpdate 'BigRed748', '4109904278359505'
GO

-- After Credit Card update
SELECT
    Gamer.GamerName,
    Gamer.CreditCard
FROM Gamer
WHERE Gamer.GamerName = 'BigRed748'
ORDER BY Gamer.GamerName
GO

----Count the number times Warrior is used by a specific user to be used in the view
GameCharacterBreakDown
CREATE FUNCTION dbo.Warrior (@gamerName varchar(25))
RETURNS int AS
BEGIN
    DECLARE @warrior int

    SELECT @warrior = COUNT(Class)FROM GamerTournament AS gt
    JOIN Gamer AS g ON g.GamerID = gt.GamerID
    JOIN Tournament AS t ON t.TournamentID = gt.TournamentID
    JOIN GameMode AS gm ON gm.GameModeID = t.GameModeID
    JOIN CharacterGameMode AS cgm ON cgm.GameModeID = gm.GameModeID
    JOIN GameCharacter AS gc ON gc.CharacterID = cgm.CharacterID
    WHERE gc.Class = 'Warrior'
    AND g.GamerName = @gamerName

    RETURN @warrior
END
GO

----Count the number times Assassin is used by a specific user to be used in the view
GameCharacterBreakDown

```

```

CREATE FUNCTION dbo.Assassin (@gamerName varchar(25))
RETURNS int AS
BEGIN

    DECLARE @assassin int

    SELECT @assassin = COUNT(Class)FROM GamerTournament AS gt
    JOIN Gamer AS g ON g.GamerID = gt.GamerID
    JOIN Tournament AS t ON t.TournamentID = gt.TournamentID
    JOIN GameMode AS gm ON gm.GameModeID = t.GameModeID
    JOIN CharacterGameMode AS cgm ON cgm.GameModeID = gm.GameModeID
    JOIN GameCharacter AS gc ON gc.CharacterID = cgm.CharacterID
    WHERE gc.Class = 'Assassin'
    AND g.GamerName = @gamerName

    RETURN @assassin

END
GO

----Count the number times Mage is used by a specific user to be used in the view
GameCharacterBreakDown

CREATE FUNCTION dbo.Mage (@gamerName varchar(25))
RETURNS int AS
BEGIN

    DECLARE @mage int

    SELECT @mage = COUNT(Class)FROM GamerTournament AS gt
    JOIN Gamer AS g ON g.GamerID = gt.GamerID
    JOIN Tournament AS t ON t.TournamentID = gt.TournamentID
    JOIN GameMode AS gm ON gm.GameModeID = t.GameModeID
    JOIN CharacterGameMode AS cgm ON cgm.GameModeID = gm.GameModeID
    JOIN GameCharacter AS gc ON gc.CharacterID = cgm.CharacterID
    WHERE gc.Class = 'Mage'
    AND g.GamerName = @gamerName

    RETURN @mage

END
GO

----Create a function to count the number times Hunter is used by a specific user to be
used in the view GameCharacterBreakDown
CREATE FUNCTION dbo.Hunter (@gamerName varchar(25))
RETURNS int AS
BEGIN

    DECLARE @hunter int

    SELECT @hunter = COUNT(Class)FROM GamerTournament AS gt
    JOIN Gamer AS g ON g.GamerID = gt.GamerID
    JOIN Tournament AS t ON t.TournamentID = gt.TournamentID
    JOIN GameMode AS gm ON gm.GameModeID = t.GameModeID
    JOIN CharacterGameMode AS cgm ON cgm.GameModeID = gm.GameModeID
    JOIN GameCharacter AS gc ON gc.CharacterID = cgm.CharacterID
    WHERE gc.Class = 'Hunter'
    AND g.GamerName = @gamerName

```

```

        RETURN @hunter
END
GO

-- Count the number times Guardian is used by a specific user to be used in the view
-- GameCharacterBreakDown

CREATE FUNCTION dbo.Guardian (@gamerName varchar(25))
RETURNS int AS
BEGIN

    DECLARE @guardian int

    SELECT @guardian = COUNT(Class)FROM GamerTournament AS gt
        JOIN Gamer AS g ON g.GamerID = gt.GamerID
        JOIN Tournament AS t ON t.TournamentID = gt.TournamentID
        JOIN GameMode AS gm ON gm.GameModeID = t.GameModeID
        JOIN CharacterGameMode AS cgm on cgm.GameModeID = gm.GameModeID
        JOIN GameCharacter AS gc ON gc.CharacterID = cgm.CharacterID
        WHERE gc.Class = 'Guardian'
        AND g.GamerName = @gamerName

    RETURN @guardian
END
GO

--This view generates a table of the Gamers selection history of a Game Character Class
that can be used in Access.

CREATE VIEW CharacterBreakDown AS
SELECT
    Gamer.GamerName,
    dbo.Warrior('AlexPSU79') AS Warrior,
    dbo.Assassin('AlexPSU79') AS Assassin,
    dbo.Mage('AlexPSU79') AS Mage,
    dbo.Hunter('AlexPSU79') AS Hunter,
    dbo.Guardian('AlexPSU79') AS Guardian
FROM Gamer
WHERE gamer.GamerName = 'AlexPSU79'
UNION
SELECT
    Gamer.GamerName,
    dbo.Warrior('John2Tymes') AS Warrior,
    dbo.Assassin('John2Tymes') AS Assassin,
    dbo.Mage('John2Tymes') AS Mage,
    dbo.Hunter('John2Tymes') AS Hunter,
    dbo.Guardian('John2Tymes') AS Guardian
FROM Gamer
WHERE gamer.GamerName = 'John2Tymes'
UNION
SELECT
    Gamer.GamerName,
    dbo.Warrior('King_Pain') AS Warrior,
    dbo.Assassin('King_Pain') AS Assassin,
    dbo.Mage('King_Pain') AS Mage,
    dbo.Hunter('King_Pain') AS Hunter,
    dbo.Guardian('King_Pain') AS Guardian
FROM Gamer

```

```

WHERE gamer.GamerName = 'King_Pain'
GO

-- This view creates a table of the top 3 In Game Purchases for each Quarter
CREATE VIEW QuarterSales AS
WITH SalesPerQuarter
AS
(
    SELECT TOP 3 202002 AS SalesQuarter,
        PurchaseDescription,
        SUM(Cost) AS CostOfSales
    FROM InGamePurchase
    WHERE PurchaseDate BETWEEN '3/1/2020' AND '5/31/2020'
    GROUP BY PurchaseDescription
    ORDER BY CostOfSales DESC
    UNION
    SELECT TOP 3 202003, PurchaseDescription,
        SUM(Cost) AS CostOfSales
    FROM InGamePurchase
    WHERE PurchaseDate BETWEEN '6/1/2020' AND '8/31/2020'
    GROUP BY PurchaseDescription
    ORDER BY CostOfSales DESC
    UNION
    SELECT TOP 3 202004, PurchaseDescription,
        SUM(Cost) AS CostOfSales
    FROM InGamePurchase
    WHERE PurchaseDate BETWEEN '9/1/2020' AND '12/31/2020'
    GROUP BY PurchaseDescription
    ORDER BY CostOfSales DESC
)

SELECT * FROM SalesPerQuarter
GO

--This function will calculate the win probability of a gamer based on their total wins
and losses
CREATE FUNCTION dbo.WinProbability (@gamerName varchar(25))
RETURNS decimal(4,1) AS
BEGIN
    DECLARE @wins int, @losses int, @returnvalue decimal(4,1)

    SELECT @wins = COUNT(Wins) FROM GamerTournament AS gt
    JOIN Gamer AS g ON g.GamerID = gt.GamerID
    JOIN Tournament AS t ON t.TournamentID = gt.TournamentID
    JOIN GameMode AS gm ON gm.GameModeID = t.GameModeID
    WHERE gm.GameType = 'Domination'
    AND Wins = 1
    AND GamerName = @gamerName

    SELECT @losses = COUNT(Losses) FROM GamerTournament AS gt
    JOIN Gamer AS g ON g.GamerID = gt.GamerID
    JOIN Tournament AS t ON t.TournamentID = gt.TournamentID
    JOIN GameMode AS gm ON gm.GameModeID = t.GameModeID
    WHERE gm.GameType = 'Domination'
    AND Losses = 1
    AND GamerName = @gamerName

    SET @returnvalue = 100 * @wins / (@wins+@losses)

```



```

        RETURN @returnvalue
END
GO

```

-- Question 1 What has been the most and least popular game character over the last 10 tournaments? (DONE)

```

SELECT
    gc.CharacterName,
    COUNT(CharacterName) AS CharacterNameCount
FROM Tournament AS t
JOIN GameMode AS gm ON gm.GameModeID = t.GameModeID
JOIN CharacterGameMode AS cgm ON cgm.GameModeID = gm.GameModeID
JOIN GameCharacter AS gc ON gc.CharacterID = cgm.CharacterID
WHERE TournamentID-10>0
GROUP BY
    gc.CharacterName
ORDER BY CharacterNameCount DESC
GO

```

-- Question 2: What are the top three grossing in-game purchases at the end of each quarter? (DONE)

```

SELECT * from QuarterSales
ORDER BY SalesQuarter, CostOfSales DESC
GO

```

-- Question 3: What is the percentage break down for a game character played by a specific gamer?  
 -- In this example, we want to know the breakdown for Gamers: AlexPSU79, John2Tymes, and King\_Pain(DONE)

```

SELECT * FROM CharacterBreakDown

```

-- Question 4: What is the most selected offensive and defensive item for a particular game character?  
 -- In this example, we are looking at the game character Deadpool. (DONE)

```

SELECT
    ge.EquipmentName,
    count(ge.EquipmentID) AS NumberTimesSelected
FROM GamerGameEquipment AS gge
JOIN GameEquipment AS ge ON ge.EquipmentID = gge.EquipmentID
JOIN Gamer AS g ON g.GamerID = gge.GamerID
JOIN GamerTournament AS gt ON gt.GamerID = g.GamerID
JOIN Tournament AS t ON t.TournamentID = gt.TournamentID
JOIN GameMode AS gm ON gm.GameModeID = t.GameModeID
JOIN CharacterGameMode AS cgm on cgm.GameModeID = gm.GameModeID
JOIN GameCharacter AS gc ON gc.CharacterID = cgm.CharacterID
WHERE ge.ItemType = 'Offensive'
AND gc.CharacterName = 'Deadpool'
GROUP BY ge.EquipmentName
ORDER BY NumberTimesSelected DESC

```

```

SELECT

```

```

        ge.EquipmentName,
        count(ge.EquipmentID) AS NumberTimesSelected
FROM GamerGameEquipment AS gge
JOIN GameEquipment AS ge ON ge.EquipmentID = gge.EquipmentID
JOIN Gamer AS g ON g.GamerID = gge.GamerID
JOIN GamerTournament AS gt ON gt.GamerID = g.GamerID
JOIN Tournament AS t ON t.TournamentID = gt.TournamentID
JOIN GameMode AS gm ON gm.GameModeID = t.GameModeID
JOIN CharacterGameMode AS cgm ON cgm.GameModeID = gm.GameModeID
JOIN GameCharacter AS gc ON gc.CharacterID = cgm.CharacterID
WHERE ge.ItemType = 'Defensive'
AND gc.CharacterName = 'Deadpool'
GROUP BY ge.EquipmentName
ORDER BY NumberTimesSelected DESC
GO

-- Question 5 What is the probability a specific gamer will win the tournament?
-- In this example, we will review Gamers: AlexPSU79, John2Tymes, King_Pain, and VG
Chewy(DONE)
SELECT
    Gamer.GamerName,
    dbo.WinProbability('AlexPSU79') AS WinProbability
FROM Gamer
WHERE Gamer.GamerName = 'AlexPSU79'
UNION
SELECT
    Gamer.GamerName,
    dbo.WinProbability('John2Tymes') AS WinProbability
FROM Gamer
WHERE Gamer.GamerName = 'John2Tymes'
UNION
SELECT
    Gamer.GamerName,
    dbo.WinProbability('King_Pain') AS WinProbability
FROM Gamer
WHERE Gamer.GamerName = 'King_Pain'
UNION
SELECT
    Gamer.GamerName,
    dbo.WinProbability('VG Chewy') AS WinProbability
FROM Gamer
WHERE Gamer.GamerName = 'VG Chewy'
GO

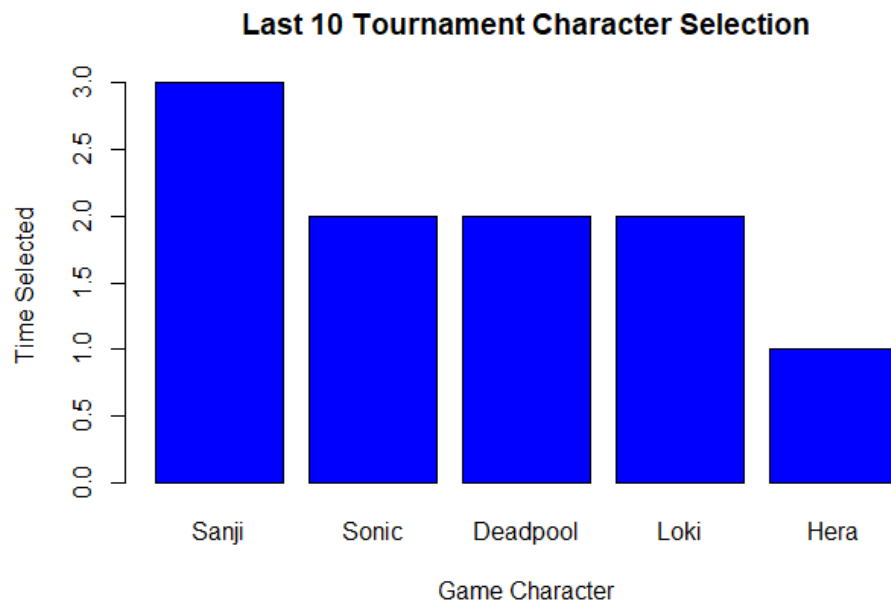
```

## **Validation**

To ensure the database is designed and performs to the requirements of Q&A Inc., the cross-functional team came up with five questions that we expect the database to be able to help us answer. Below are the questions and their answers:

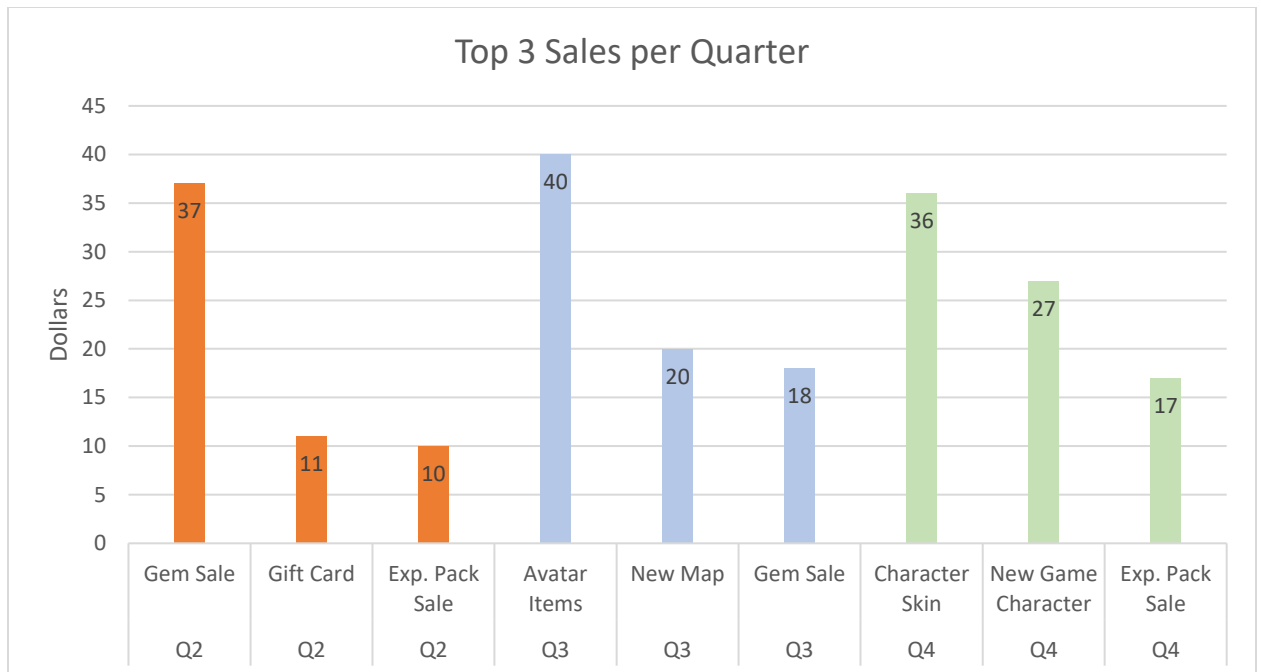
1. What has been the most and least popular game character over the last 10 tournaments?

Using RStudio we can see the most popular game character in the last 10 games is Sanji, and the least popular is Hera.



2. What are the top three grossing in-game purchases at the end of each quarter?

Linking with Excel we can see the top three purchases for the second, third and fourth quarter.



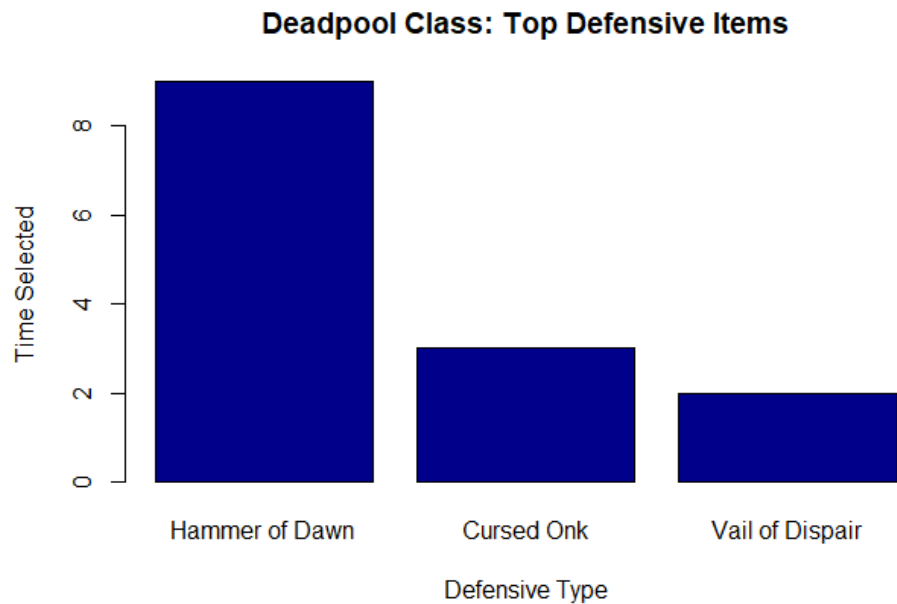
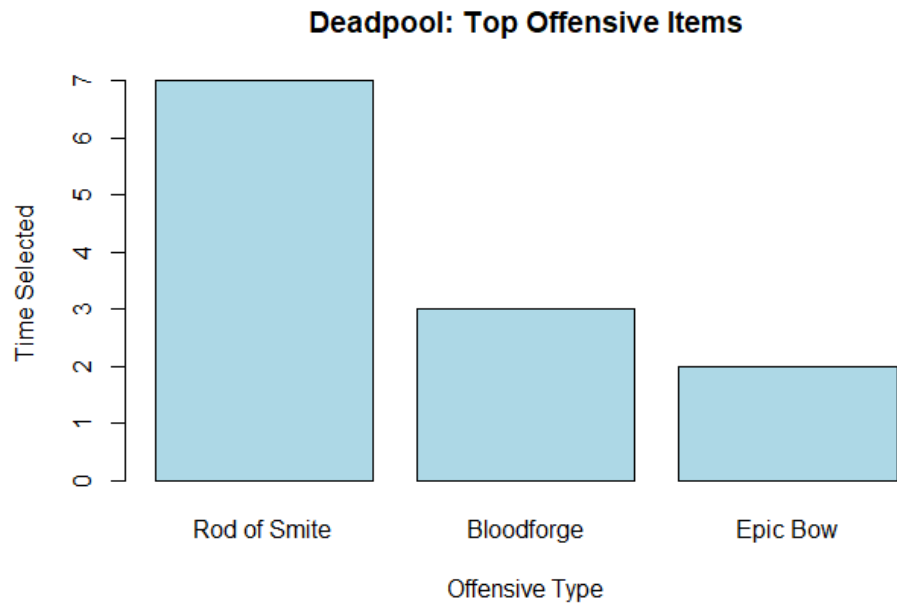
3. What is the percentage break down of a game character class played by a specific gamer?

Linking with Access we can run a report that shows percentage break down of a game character class for these specific gamers: AlexPSU79, John2Tymes, and King\_Pain.

Gamer Class Selection						
Saturday, March 27, 2021 8:09:45 PM						
GamerName	Warrior	Assassin	Mage	Hunter	Guardian	Total
AlexPSU79	0	1	1	0	2	4
% Breakdown	0	25	25	0	50	100
John2Tymes	1	3	0	0	0	4
% Breakdown	25	75	0	0	0	100
King_Pain	0	0	2	0	0	2
% Breakdown	0	0	100	0	0	100
3						

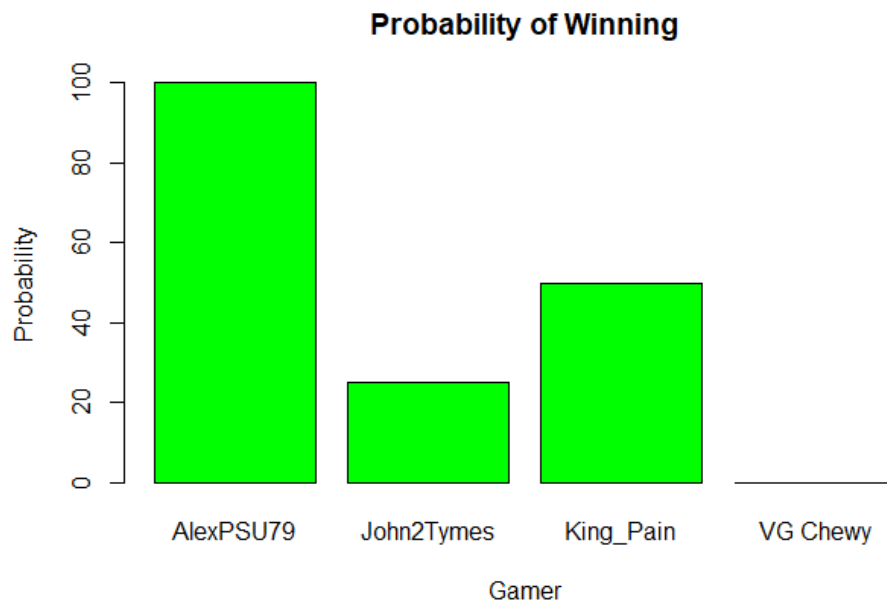
4. What is the most selected offensive and defensive item for a particular game character?

Using RStudio we can determine the most used offensive and defensive items used by the game character Deadpool.



5. What is the probability a specific gamer will win the tournament?

Using RStudio we can see the probability the following gamers will win the next tournament: AlexPSU79 (100%), John2Tymes (20%), King\_Pain (50%), and VG Chewy (0%).



### **Reflection**

Going into this class all I knew about a database was the name Microsoft Access and it can store data. I did not understand that SAP and Oracle ERP's were themselves databases until I was a few weeks into the class. I have a bigger appreciation for the database and all the planning that goes into the design, implementation, and maintenance. I would often ask our IT team "can we not just delete a part number" or "use the same customer code" when a vendor's company name would change, and then get frustrated with the response.

Constructing the conceptual and logical models help me understand the requirements for uniqueness and how our business rules drive the constraints we place on the database. I have not done programming in almost 20 years and found it to be my biggest hurdle, but it would be very gratifying when I would see my query execute correctly. I still struggle with finding the correct syntax for the primary and foreign key relationship between my Game Equipment, Offensive and Defensive tables. To a point that makes me rethink the logical model for those three tables. In parallel to this course, my work has been struggling with an Excel sheet that is storing and performing data analysis on approximately 8,000 row entries. I started asking some simple database design questions I learned though this course and now have been assigned to the team to create a database to handle the 8,000 and growing set of data. I would not have the confidence I have to take this on if it were not for this course and project.

### **Summary**

A database is a powerful and a necessary tool for any business to succeed. However, the tool is only as good as it is designed, implemented, and maintained. Starting from the bottom with the conceptual model and building on top of that with the logical model give a strong foundation to the database. Progressing into using CRUD SQL to organize our data will allow us to then use SELECT, FUNCTION, and PROCEDURE script to ask questions about the business. SQL scripting will provide us with the data to answer the questions, but SQL is not the strongest tool to provide the analysis. Linking the database to Microsoft Access, Excel or RStudio will take the handoff from the database in order for the the business to analyze the trends and needs of the business.