Game Information – Database Project

Group 8



Image Courtesy: [https://en.wikipedia.org/wiki/God\_of\_War\_(2018\_video\_game)#/media/File:God\_of\_War\_4\_cover.jpg](https://en.wikipedia.org/wiki/God_of_War_(2018_video_game)" \l "/media/File:God_of_War_4_cover.jpg)

**Section 1: Overview**

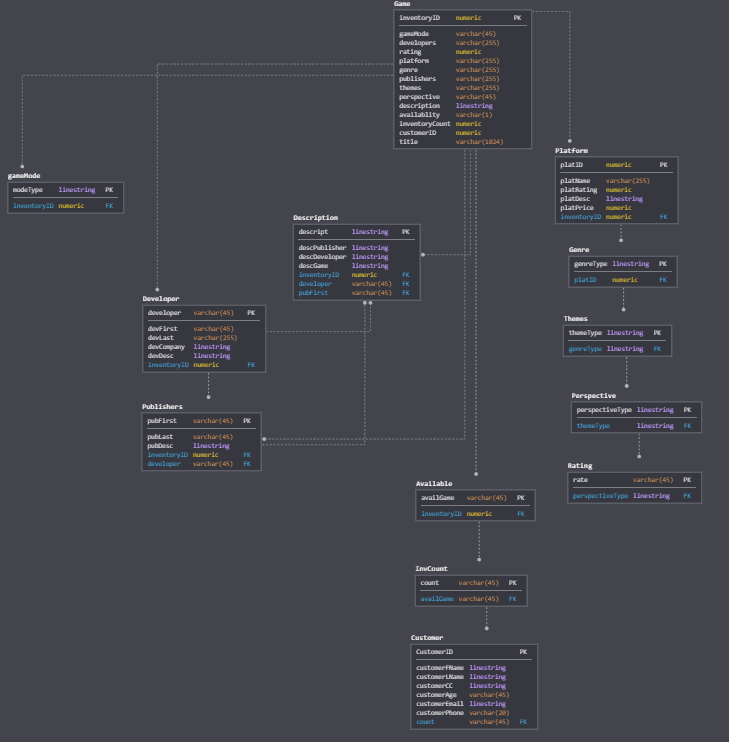
We have been tasked to create the back-end of a database; with it’s intended use as informational only. The database’s sole purpose is to provide the end user with as much information as possible that there is about the games available. Our vision was to create an expansive database which served the end user’s needs, for example: finding out when a game was created, the release date of future games, information about certain sound tracks, the names of developers/publishers/creators of games, where the idea originated, and overall rating. These are just few ideas of what the database could’ve been. Considering that this is the prototype, we were able to develop key points of the Game Database. In the future it could be turned into a subscription based database, or even free like Wikipedia, derived solely on the donations of it’s users. If the “paid subscription” is implemented, we could then create a front end website that allowed heavier loads of traffic and more expansive information to be created and stored.

Our functional specification for the utilities for such an application are as follows:

* We must store all key pieces of information about the game – Master Game Table.
* The Game must include child tables that allow for more descriptive information; if needed.
* The game must include a user rating system, that is solely based on the games available. If this is implemented, we must include critic reviews; To allow no-biased ratings
* The social aspect provided in the database is currently as registering your first and last name along with age and email (and credit card) in case you wanted to donate.
* We must keep COUNT of the available amount of games in our database that have been collected; Considering the database is still in BETA, we did not include a customer rental, and a table to record the amount of copies that have been rented out. But this can be implemented in the future.
* A user can currently query the database if they wanted to find out certain information about games. They can look at anything from the title of the game to the developer/publisher and soon to be tracks developed for the game.

Overall the database stores a variety of information in order to allow for such functionality. We have thought of various pieces of information to apply to the database to allow extensive information to be stored and queried when needed. Like we mentioned before, since the database is still in BETA, there is still more room to include more pieces of information.

**Section 2: Comprehensive UML Diagram of Database**



**Section 3: Functional Dependencies**

Our database follows the schema that was taught in class. However we still have a little redundancy; but this is because we want to allow the user to find more information than the basic items. In the future it can be built to reduce the amount of redundancy.

**Section 4: Assertion**

**-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* This has been created by Yousef**

**-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* `Game`**

**CREATE TABLE Game**

**(**

**InventoryID number(10,0) NOT NULL ,**

**gameMode varchar2(20) NOT NULL ,**

**Developers varchar2(20) NOT NULL ,**

**Rating number(10,0) NOT NULL ,**

**Platform varchar2(20) NOT NULL ,**

**Genre varchar2(20) NOT NULL ,**

**Publishers varchar2(20) NOT NULL ,**

**Themes varchar2(20) NOT NULL ,**

**Perspective varchar2(20) NOT NULL ,**

**Description varchar2(255) NOT NULL ,**

**Availablity varchar2(1) NOT NULL ,**

**InventoryCount number(10,0) NOT NULL ,**

**CustomerID number(10,0) NOT NULL ,**

**title varchar2(20) NOT NULL,**

**PRIMARY KEY (inventoryID)**

**);**

**-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* `Platform`**

**CREATE TABLE Platform**

**(**

**platID number(10,0) NOT NULL ,**

**platname varchar2(25) NOT NULL ,**

**platrating number(10,0) NOT NULL ,**

**platdesc varchar2(25) NOT NULL,**

**platprice number(10,0) NOT NULL ,**

**InventoryID number(10,0) NOT NULL ,**

**PRIMARY KEY (platID)**

**);**

**CREATE INDEX FK1 ON Platform (InventoryID);**

**ALTER TABLE Platform**

**ADD CONSTRAINT FK20**

**FOREIGN KEY (inventoryID)**

**REFERENCES Game (inventoryID);**

**-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* `gameMode`**

**CREATE TABLE gameMode**

**(**

**modeType varchar(45) NOT NULL ,**

**InventoryID number(10,0) NOT NULL ,**

**PRIMARY KEY (modeType)**

**);**

**CREATE INDEX FK2 ON gameMode (inventoryID);**

**ALTER TABLE gameMode**

**ADD CONSTRAINT FK21**

**FOREIGN KEY (inventoryID)**

**REFERENCES Game (inventoryID);**

**-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* `Developer`**

**CREATE TABLE Developer**

**(**

**developer varchar2(45) NOT NULL ,**

**devFirst varchar2(10) NOT NULL ,**

**devLast varchar2(10) NOT NULL ,**

**devCompany varchar2(16) NOT NULL ,**

**devDesc varchar2(30) NOT NULL ,**

**inventoryID number(10) NOT NULL ,**

**PRIMARY KEY (developer)**

**);**

**CREATE INDEX FK3 ON Developer (inventoryID);**

**ALTER TABLE Developer**

**ADD CONSTRAINT FK22**

**FOREIGN KEY (inventoryID)**

**REFERENCES Game (inventoryID);**

**-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* `Available`**

**CREATE TABLE Available**

**(**

**availGame varchar2(1) NOT NULL ,**

**inventoryID number(10) NOT NULL ,**

**PRIMARY KEY (availGame)**

**);**

**CREATE INDEX FK4 ON Available (inventoryID);**

**ALTER TABLE Available**

**ADD CONSTRAINT FK23**

**FOREIGN KEY (inventoryID)**

**REFERENCES Game (inventoryID);**

**-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* `Publishers`**

**CREATE TABLE Publishers**

**(**

**pubFirst varchar2(17) NOT NULL ,**

**pubLast varchar2(17) NOT NULL ,**

**pubDesc varchar2(30) NOT NULL ,**

**inventoryID number(10) NOT NULL ,**

**developer varchar2(45) NOT NULL ,**

**PRIMARY KEY (pubFirst)**

**);**

**CREATE INDEX FK5 ON Publishers (inventoryID);**

**ALTER TABLE Publishers**

**ADD CONSTRAINT FK24**

**FOREIGN KEY (inventoryID)**

**REFERENCES Game (inventoryID);**

**ALTER TABLE Publishers**

**ADD CONSTRAINT FK25**

**FOREIGN KEY (developer)**

**REFERENCES Developer (developer);**

**-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* `InvCount`**

**CREATE TABLE InvCount**

**(**

**count varchar2(10) NOT NULL ,**

**availGame varchar2(1) NOT NULL ,**

**PRIMARY KEY (count)**

**);**

**ALTER TABLE InvCount**

**ADD CONSTRAINT FK26**

**FOREIGN KEY (availGame)**

**REFERENCES Available (availGame);**

**-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* `Genre`**

**CREATE TABLE Genre**

**(**

**genreType varchar2(11) NOT NULL ,**

**platID number(10) NOT NULL ,**

**PRIMARY KEY (genreType)**

**);**

**CREATE INDEX FK7 ON Genre (platID);**

**ALTER TABLE Genre**

**ADD CONSTRAINT FK27**

**FOREIGN KEY (platID)**

**REFERENCES Platform (platID);**

**-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* `Themes`**

**CREATE TABLE Themes**

**(**

**themeType varchar2(16) NOT NULL ,**

**genreType varchar2(16) NOT NULL ,**

**PRIMARY KEY (themeType)**

**);**

**CREATE INDEX FK8 ON Themes (genreType);**

**ALTER TABLE Themes**

**ADD CONSTRAINT FK28**

**FOREIGN KEY (genreType)**

**REFERENCES Genre (genreType);**

**-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* `Description`**

**CREATE TABLE Description**

**(**

**descript varchar2(255) NOT NULL ,**

**descPublisher varchar2(30) NOT NULL ,**

**descDeveloper varchar2(30) NOT NULL ,**

**descGame varchar2(255) NOT NULL ,**

**inventoryID number(10) NOT NULL ,**

**developer varchar2(20) NOT NULL ,**

**pubFirst varchar2(10) NOT NULL ,**

**PRIMARY KEY (descript)**

**);**

**CREATE INDEX FK9 ON Description (developer);**

**ALTER TABLE Description**

**ADD CONSTRAINT FK29**

**FOREIGN KEY (developer)**

**REFERENCES Developer (developer);**

**ALTER TABLE Description**

**ADD CONSTRAINT FK30**

**FOREIGN KEY (pubFirst)**

**REFERENCES Publishers (pubFirst);**

**ALTER TABLE Description**

**ADD CONSTRAINT FK31**

**FOREIGN KEY (inventoryID)**

**REFERENCES Game (inventoryID);**

**-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* `Customer`**

**CREATE TABLE Customer**

**(**

**CustomerID varchar2(5) NOT NULL ,**

**customerFName varchar2(10) NOT NULL ,**

**customerLName varchar2(10) NOT NULL ,**

**customerCC varchar2(21) NOT NULL ,**

**customerDOB varchar2(13) NOT NULL ,**

**customerEmail varchar2(22) NOT NULL ,**

**customerPhone varchar2(13) NOT NULL ,**

**invCount varchar2(8) NOT NULL ,**

**PRIMARY KEY (CustomerID)**

**);**

**CREATE INDEX FK10 ON Customer (invCount);**

**ALTER TABLE Customer**

**ADD CONSTRAINT FK32**

**FOREIGN KEY (invCount)**

**REFERENCES InvCount (count);**

**-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* `Perspective`**

**CREATE TABLE Perspective**

**(**

**perspectiveType varchar2(16) NOT NULL ,**

**themeType varchar2(16) NOT NULL ,**

**PRIMARY KEY (perspectiveType)**

**);**

**CREATE INDEX FK11 ON Perspective (themeType);**

**ALTER TABLE Perspective**

**ADD CONSTRAINT FK33**

**FOREIGN KEY (themeType)**

**REFERENCES Themes (themeType);**

**-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* `Rating`**

**CREATE TABLE Rating**

**(**

**rate varchar2(45) NOT NULL ,**

**perspectiveType varchar(16) NOT NULL ,**

**PRIMARY KEY (rate)**

**);**

**CREATE INDEX FK12 ON Rating (perspectiveType);**

**ALTER TABLE Rating**

**ADD CONSTRAINT FK34**

**FOREIGN KEY (perspectiveType)**

**REFERENCES Perspective (perspectiveType);**

**INSERT INTO Game**

**(InventoryID, gameMode, Developers, Rating, Platform, Genre, Publishers, Themes,**

**Perspective, Description, Availablity, InventoryCount, CustomerID, Title)**

**VALUES**

**(1, 'SP', 'Santa Monica STD', 96, 'PS4', 'Adventure', 'Sony ENT', 'Mythology', '3rd Person', 'Play as Kratos in the new 2018 Game', 'T', 1, 0001, 'God of War');**

**INSERT INTO Game**

**(InventoryID, gameMode, Developers, Rating, Platform, Genre, Publishers, Themes,**

**Perspective, Description, Availablity, InventoryCount, CustomerID, Title)**

**VALUES**

**(2, 'SP', 'Capcom', 92, 'XB1', 'Hack/Slash', 'Capcom', 'Fantasy', '3rd Person', 'Play as three demon hunters to save humanity from a demonic invasion', 'T', 1, 0002, 'Devil May Cry 5');**

**INSERT INTO PLATFORM**

**(PLATID, PLATNAME, PLATRATING, PLATDESC, PLATPRICE, INVENTORYID)**

**VALUES**

**(1, 'PS4', 96, 'DEVELOPED BY SONY', 269, 1);**

**INSERT INTO PLATFORM**

**(PLATID, PLATNAME, PLATRATING, PLATDESC, PLATPRICE, INVENTORYID)**

**VALUES**

**(2, 'PC', 100, 'PC Master Race', 1000, 1);**

**INSERT INTO PLATFORM**

**(PLATID, PLATNAME, PLATRATING, PLATDESC, PLATPRICE, INVENTORYID)**

**VALUES**

**(3, 'XB1', 90, 'DEVELOPED BY MICROSOFT', 499, 1);**

**INSERT INTO gameMode**

**(modeType, inventoryID)**

**VALUES**

**('SP', 1);**

**INSERT INTO Developer**

**(DEVELOPER, DEVFIRST, DEVLAST, DEVCOMPANY, DEVDESC, INVENTORYID)**

**VALUES**

**('READY AT DAWN', 'SCOTT', 'ROGERS', 'SANTA MONICA STD', 'VIDEO GAME DESIGNER', 1);**

**INSERT INTO Developer**

**(DEVELOPER, DEVFIRST, DEVLAST, DEVCOMPANY, DEVDESC, INVENTORYID)**

**VALUES**

**('Campcomi LTD', 'Hideaki', 'Itsuno', 'Capcom', 'Director', 2);**

**INSERT INTO AVAILABLE**

**(AVAILGAME, INVENTORYID)**

**VALUES**

**('T', 1);**

**INSERT INTO PUBLISHERS**

**(PUBFIRST, PUBLAST, PUBDESC, INVENTORYID, DEVELOPER)**

**VALUES**

**('Hirai', 'Kaz', 'CEO OF SONY ENT', 1, 'READY AT DAWN');**

**INSERT INTO PUBLISHERS**

**(PUBFIRST, PUBLAST, PUBDESC, INVENTORYID, DEVELOPER)**

**VALUES**

**('Kenzo', 'Tsujimoto', 'CEO OF CAPCOM LTD', 2, 'Capcom');**

**INSERT INTO INVCOUNT**

**(COUNT, AVAILGAME)**

**VALUES**

**(1, 'T');**

**INSERT INTO GENRE**

**(GENRETYPE, PLATID)**

**VALUES**

**('Adventure', 1 );**

**INSERT INTO GENRE**

**(GENRETYPE, PLATID)**

**VALUES**

**('Hack/Slash', 3);**

**INSERT INTO THEMES**

**(THEMETYPE, GENRETYPE)**

**VALUES**

**('Mythology', 'Adventure');**

**INSERT INTO THEMES**

**(THEMETYPE, GENRETYPE)**

**VALUES**

**('Action', 'Hack/Slash');**

**INSERT INTO DESCRIPTION**

**(DESCRIPT, DESCPUBLISHER, DESCDEVELOPER, DESCGAME, INVENTORYID, DEVELOPER, PUBFIRST)**

**VALUES**

**('Table of Information', 'CEO OF SONY ENT', 'VIDEO GAME DESIGNER', 'Play as Kratos in the new 2018 Game', 1, 'READY AT DAWN', 'Hirai' );**

**INSERT INTO DESCRIPTION**

**(DESCRIPT, DESCPUBLISHER, DESCDEVELOPER, DESCGAME, INVENTORYID, DEVELOPER, PUBFIRST)**

**VALUES**

**('Info', 'CEP OF CAPCOM', 'Game Director', 'Play as three demon hunters to save humanity from a demonic invasion', 1, 'Capcom','Kenzo');**

**INSERT INTO Customer**

**(CUSTOMERID, CUSTOMERFNAME, CUSTOMERLNAME, CUSTOMERCC, CUSTOMERDOB, CUSTOMEREMAIL,**

**CUSTOMERPHONE, INVCOUNT)**

**VALUES**

**(0001, 'Yousef', 'Jarrar', '4342-5620-8563-5541', '27', '005845836@csusb.edu', '909-537-7266', 1);**

**INSERT INTO Customer**

**(CUSTOMERID, CUSTOMERFNAME, CUSTOMERLNAME, CUSTOMERCC, CUSTOMERDOB, CUSTOMEREMAIL,**

**CUSTOMERPHONE, INVCOUNT)**

**VALUES**

**(0002, 'Harry', 'Hacker', '1234-4567-8910-3942', '30', '002345678@csusb.edu', '909-321-4321', 1);**

**INSERT INTO Customer**

**(CUSTOMERID, CUSTOMERFNAME, CUSTOMERLNAME, CUSTOMERCC, CUSTOMERDOB, CUSTOMEREMAIL,**

**CUSTOMERPHONE, INVCOUNT)**

**VALUES**

**(0003, 'Suarez', 'George', '9876-3214-5942-4521', '25', '006098556@csusb.edu', '909-352-1235', 1);**

**INSERT INTO PERSPECTIVE**

**(PERSPECTIVETYPE, THEMETYPE)**

**VALUES**

**('3rd Person', 'Mythology');**

**INSERT INTO RATING**

**(RATE, PERSPECTIVETYPE)**

**VALUES**

**(96, '3rd Person');**

**INSERT INTO RATING**

**(RATE, PERSPECTIVETYPE)**

**VALUES**

**(92, '3rd Person');**

**CREATE OR REPLACE TRIGGER print\_game\_info**

**BEFORE INSERT OR UPDATE ON Game**

**FOR EACH ROW**

**BEGIN**

**dbms\_output.put\_line('Title: ' || :new.title);**

**dbms\_output.put\_line('Rating: ' || :new.Rating);**

**dbms\_output.put\_line('Platform: ' || :new.Platform);**

**dbms\_output.put\_line('Genre: ' || :new.Genre);**

**dbms\_output.put\_line('Description: ' || :new.Description);**

**dbms\_output.put\_line('Availability: ' || :new.Availablity);**

**dbms\_output.put\_line('InventoryCount: ' || :new.InventoryCount || chr(10));**

**END;**

**/**

**CREATE OR REPLACE TRIGGER inv\_count\_is\_zero**

**BEFORE INSERT OR UPDATE on Game**

**FOR EACH ROW**

**BEGIN**

**IF :new.InventoryCount = 0 THEN :new.Availablity := 'F';**

**ELSE :new.Availablity := 'T';**

**END IF;**

**END;**

**/**

**CREATE OR REPLACE TRIGGER increase\_inv\_count**

**BEFORE INSERT on Game**

**FOR EACH ROW**

**BEGIN**

**UPDATE Game g**

**SET g.InventoryCount = g.InventoryCount + :new.InventoryCount**

**WHERE g.CustomerID = :new.CustomerID;**

**END;**

**/**

**CREATE OR REPLACE TRIGGER deleted\_customer**

**BEFORE DELETE on Customer**

**FOR EACH ROW**

**BEGIN**

**dbms\_output.put\_line('Deleted Customer: ' || :old.CustomerFName);**

**END;**

**/**

**UPDATE Game**

**SET InventoryCount = InventoryCount + 1;**

**CREATE VIEW V1 AS**

**SELECT title, Description, Availablity, InventoryCount, CustomerID**

**FROM Game**

**WHERE InventoryID IS NOT NULL;**

**DELETE FROM Customer c**

**WHERE EXISTS (SELECT g.CustomerID**

**FROM Game g**

**WHERE c.CustomerID = g.CustomerID);**