

Game Picker Database

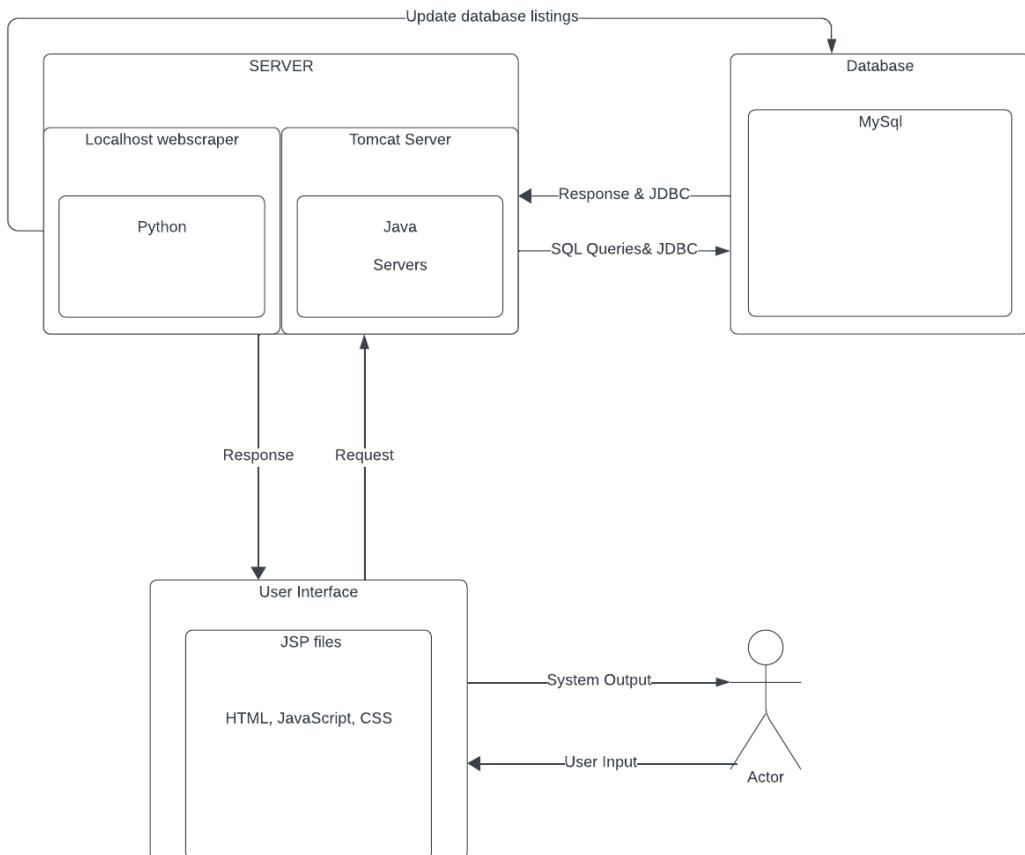
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Project Description

Create a database schema to collect, organize and compare video game prices across various content delivery services such as Steam, Epic Games and GOG. This database will serve as the backbone for applications aimed at helping consumers make informed decisions about purchasing video games. The primary goal of this project is to create a comprehensive database schema that will collect, organize, and compare video game prices across multiple content delivery platforms such as Steam, Epic Games and GOG. This database will serve as an application designed to help consumers make well-informed decisions when purchasing video games. The motivation behind building this project is to develop a simple website that eliminates the complexities of searching for different vendors and comparing prices. By consolidating all prices into one place, users can easily compare and contrast the various prices in the market. The website also streamlines the user experience by removing unnecessary descriptions, providing straightforward information. Unlike existing solutions that may focus solely on one platform or lack historical pricing data, our database will incorporate time-series data for each game and offer multi-platform pricing comparisons. This feature allows for more accurate trend tracking and semi realtime cross-platform comparisons. In addition, stakeholders will be consumers, game publishers and the content delivery providers. Lastly, the domain of this project would be retail and entertainment, with a focus on e-commerce and digital content delivery. The benefits to the users will be a one-stop solution eliminating the need to manually compare prices when making a purchase.

System Environment:

System Structure



1) Hardware and Software used:

- Apache Tomcat
- IntelliJ
- Jakarta EE9

2) RDBMS:

- MySQL Community Server 8.0

3) Application Languages:

- Java (Backend), SQL (Database), HTML (Frontend), JavaScript (Frontend), Python (Data Scraping)

Project Requirements Section:

Functional Requirements

This application empowers the users to explore pricing options for various games across multiple vendors, allowing them to discover the best prices in the current market. The main objective of this project is to employ web scrapers using Python to systematically extract price data from a list of games from vendors, such as Steam and Epic Games to store them into a MySQL database instance.

Moreover, users are able to explore the historical pricing trends of the specific games to see if they are given the best deal. Additionally, users are able to read comprehensive details of the game, including the titles, genres, publisher, release dates, alongside with the system requirements. From this information, users are able to make the best purchase decisions to save time and money.

Functions

Create an Account

- Users will be able to create an account to login to the website. This will allow them to have all the permissions to use all the features listed below except the admin functionalities.

Login to an Account

- Users will be able to login to an existing account to login to the website. This will allow them to access the website as well as see which games they have wishlist, purchased, leaving reviews, and browse games.

Logout of an Account

- Users will be able to logout after they have signed in. This will allow other users to login and see their profiles.

Search for a Game

- Users will be able to search the database to find a game they are interested in. This search will return either the listing of the game or a 'product not found' message.
- If the game is found: Display game details, including title, genre and list of platforms with current prices. If the game is not found: Users can press the "Request a Game" button to request that game be added to the database.

Request for a Game

- If the game a user is looking for is not in the database, they can request it to be added by providing the game's name and the link to its listing on a content delivery platform. The game will be added manually at a later point.
- System will display a form to input the game's name and the link where it can be found.

History Pricing

- Users will be able to look up the historical prices of a specific game in the past to see if they are given the best deal.
- The system will display the cheapest price in the past alongside the current price of the game.

Browse Games

- Users can browse through the game listings and view the platform offering the lowest price for each game.
- The system will deliver the game information of the game in a summarized manner to display the deals, more information can be discovered if the user clicks on the page.

Sort Games by Price

- A filter button allows users to sort games by price, returning a list of games that fit the criteria
- The system queries the database and returns a sorted list based on price

Sort Games by Genre

- A filter button allows users to sort games by genre, returning a list of games that fit the criteria.
- The system queries the database and returns a sorted list based on price by genre

Order Games by Alphabetical, High to Low prices

- A filter button allows users to sort games by A-Z, Z-A, low to high prices and high to low prices. This will return a list of games that fit the criteria.
- The system queries the database and returns a sorted list based on price by Alphabetical order

Buy game

- Users can click a 'Buy Game' button that redirects them via a hyperlink to the platform offering the lowest price for the selected game.
- The system will display a list of vendors with the cheapest prices on the top for users to choose from.

View Game Details

- Users can click on a game banner to bring them to a page that displays game information, description, developers, etc...

Favorite Listing

- Users can "favorite" games they are interested in for future reference. These listings will be stored under a 'Favorites' tab and will display the platform offering the lowest price. These listings will be saved in the browser's cookies
- The system will load the favorite games from the user's cookies and return the list of games.

Track Purchase History

- Users can keep track of which games they have purchased in the past and from which vendor. Allowing them to not buy duplicate copies of a game.
- System will load the purchase history from a database entity.

User Reviews

- Users can leave a review and star ratings on a particular game, allowing other users to be wary of potential bugs and difficulty before buying the product.
- System will load the user reviews into the game product whenever the user clicks on a game.

Admin Features

Update Game

- Admins can update game information through the admin portal by inputting the details on a form.

Add Game

- Admins can add new games through the admin portal by inputting the details on a form.

Remove Game

- Admins can remove existing games through the admin portal by inputting the game id

View Game Requests From Users

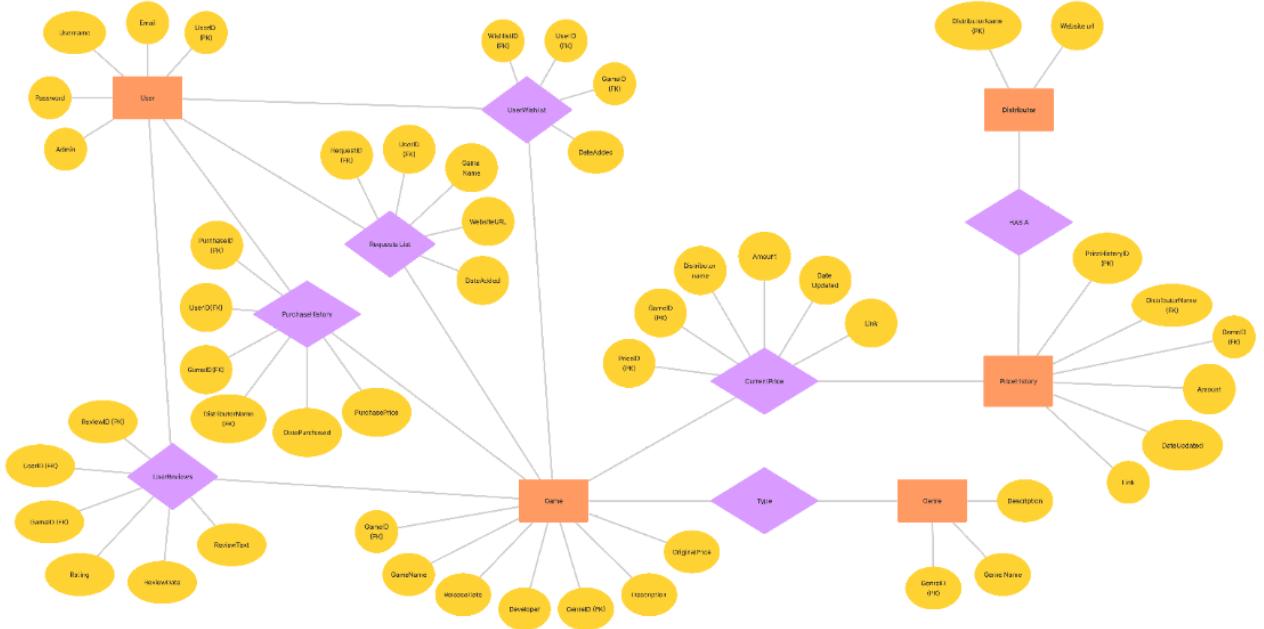
- Administrators can check which games were requested by users.

Remove Game Requests From Users

- Administrators remove game requests from user off the database.

Project Design Section

- Corrected/Updated ERD



- One change we would make to this if we could do this project again. Is changing our current price table to only be GameID and PriceHistoryID. This will remove some redundancy in our database.

Screenshots of the 10 relation tables

Currentprice

Table: currentprice

Columns:

- PriceID** int AI PK
- GameID** int
- DistributorName** varchar(255)
- Amount** decimal(10,2)
- DateUpdated** date
- Link** varchar(255)

| | PriceID | GameID | DistributorName | Amount | DateUpdated | Link |
|----|---------|------------|-----------------|------------|---|---|
| ▶ | 1 | 1000 | Steam | 29.99 | 2023-12-05 | https://store.steampowered.com/agecheck/app/1000 |
| 2 | 1001 | Steam | 29.99 | 2023-12-05 | https://store.steampowered.com/app/8870/Bio.. | |
| 3 | 1002 | Steam | 59.99 | 2023-10-01 | https://store.steampowered.com/app/374320/.. | |
| 4 | 1003 | Steam | 59.99 | 2023-10-01 | https://store.steampowered.com/app/1245620/.. | |
| 5 | 1004 | Steam | 59.99 | 2023-10-01 | https://store.steampowered.com/app/1086940/.. | |
| 6 | 1005 | Steam | 59.99 | 2023-10-01 | https://store.steampowered.com/app/1517290/.. | |
| 7 | 1006 | Steam | 14.99 | 2023-10-01 | https://store.steampowered.com/app/367520/.. | |
| 8 | 1007 | Steam | 8.99 | 2023-10-01 | https://store.steampowered.com/app/239140/.. | |
| 9 | 1008 | Steam | 39.99 | 2023-10-01 | https://store.steampowered.com/app/489830/.. | |
| 10 | 1009 | Steam | 59.99 | 2023-10-01 | https://store.steampowered.com/app/397540/.. | |
| 11 | 1010 | Steam | 24.99 | 2023-10-01 | https://store.steampowered.com/app/1145360/.. | |
| 12 | 1000 | Epic Games | 59.99 | 2023-10-14 | https://epicgamesdb.info/p/5e0277378de542ce.. | |
| 13 | 1001 | Epic Games | 54.97 | 2023-10-14 | https://epicgamesdb.info/p/1891e44daa4a4b9.. | |
| 14 | 1005 | Epic Games | 59.99 | 2023-10-14 | https://epicgamesdb.info/p/a85bd01b67184c4c.. | |
| 15 | 1007 | Epic Games | 74.00 | 2023-10-14 | https://epicgamesdb.info/p/047a4d0a7344445f.. | |

Distributor: Unable to reach 15 vendors because there aren't a lot of established vendors

Table: distributor

Columns:

- Name** varchar(255) PK
- WebsiteURL** varchar(255)

| | Name | WebsiteURL |
|---|------------|---|
| ▶ | Epic Games | https://epicgamesdb.info/ |
| | GOG | https://www.gogdb.org/ |
| | Steam | https://steamdb.info/ |
| * | HULL | HULL |

Game

Schemas

- game
 - Columns
 - Indexes
 - Foreign Keys
 - Triggers
- genre
- pricehistory
- purchasehistory
- requestlist
- userreview
- users
- userwishlist

Table: game

Columns:

| GameID | GameName | ReleaseDate | Developer | GenreID | Description |
|--------|---|-------------|-----------------------------|---------|-------------------------|
| 1000 | Cyberpunk 2077 | 2020-12-10 | Cd Projekt Redss | 2 | Cyberpunk 2077 is an |
| 1001 | Bioshock Infinite | 2013-03-26 | Irrational Games | 5 | Indebted to the wrong |
| 1002 | Dark Souls 3 | 2023-10-01 | From Software | 6 | Dark Souls continues t |
| 1003 | Elden Ring | 2023-10-02 | From Software | 2 | Elden Ring is a 2022 a |
| 1004 | Baldur's Gate 3 | 2023-10-03 | Larian Studios | 2 | Baldur's Gate 3 is a r |
| 1005 | Battlefield 2042 | 2021-11-19 | Dice | 9 | Battlefield™ 2042 is a |
| 1006 | Hollow Knight | 2017-02-24 | Team Cherry | 5 | Forge your own path i |
| 1007 | Dying Light: Definitive Edition | 2021-05-27 | Techland | 3 | First-person action su |
| 1008 | The Elder Scrolls V: Skyrim Special Edition | 2016-10-28 | Bethesda Game Studios | 3 | Winner of more than 2 |
| 1009 | Borderlands 3 | 2019-09-13 | Gearbox Software | 9 | The original shooter-le |
| 1010 | Hades | 2018-12-06 | Supergiant games | 10 | Defy the god of the d |
| 1100 | World of Warships | 2017-11-15 | Wargaming Group Limited | 2 | Immerse yourself in th |
| 1102 | hunggo | 2023-12-02 | hung2 | 2 | this test |
| 1115 | BattleBit Remastered | 2023-06-15 | SgtOkiDoki, Vilaskis, Th... | 5 | BattleBit Remastered i |
| 1117 | MORDHAU | 2019-04-29 | Triternion | 1 | MORDHAU is a multip |

Genre

Schemas

Filter objects

- classicmodels
- gamepickerdb
 - Tables
 - currentprice
 - distributor
 - game
 - genre
 - pricehistory
 - purchasehistory
 - requestlist
 - userreview
 - users
 - userwishlist
 - Views
 - Stored Procedures
 - Functions
- hung_nguyen
- nguyen

Table: genre

Columns:

| GenreID | GenreName | Description |
|---------|--------------|---|
| 1 | Simulations | https://en.wikipedia.org/wiki/Simulation_video... |
| 2 | RPG | https://en.wikipedia.org/wiki/Role-playing_game |
| 3 | Open World | https://en.wikipedia.org/wiki/Open_world |
| 4 | Visual Novel | https://en.wikipedia.org/wiki/Visual_novel |
| 5 | Action | https://en.wikipedia.org/wiki/Action_game |
| 6 | Adventure | https://en.wikipedia.org/wiki/Adventure_game |
| 7 | Strategy | https://en.wikipedia.org/wiki/Strategy_game |
| 8 | Platformer | https://en.wikipedia.org/wiki/Platformer |
| 9 | Shooter | https://en.wikipedia.org/wiki/Shooter_game |
| 10 | Rogue Like | https://en.wikipedia.org/wiki/Roguelike |
| 11 | FPS | https://en.wikipedia.org/wiki/First-person_shooter |
| 12 | Sports | https://en.wikipedia.org/wiki/Sports_video_game |
| 13 | Fighting | https://en.wikipedia.org/wiki/Fighting_game |
| 14 | RTS | https://en.wikipedia.org/wiki/Real-time_strategy |
| 15 | Casual | https://en.wikipedia.org/wiki/Casual_game |

Pricehistory

Table: **pricehistory**

Columns:

| PriceHistoryID | int AI PK | | | | |
|-----------------------|---------------|------|-------|------------|---|
| DistributorName | varchar(255) | | | | |
| GameID | int | | | | |
| Amount | decimal(10,2) | | | | |
| DateUpdated | date | | | | |
| Link | text | | | | |
| 1 | Steam | 1000 | 59.99 | 2023-05-01 | https://store.steampowered.com/app/1091500... |
| 2 | Steam | 1000 | 49.99 | 2023-05-15 | https://store.steampowered.com/app/1091500... |
| 3 | Steam | 1001 | 15.99 | 2023-05-05 | https://store.steampowered.com/app/8870Bio... |
| 4 | Epic Games | 1001 | 12.99 | 2023-05-20 | https://store.epicgames.com/en-US/p/bioshock... |
| 5 | GOG | 1001 | 14.99 | 2023-05-28 | https://www.gog.com/en/game/bioshock_infinite |
| 6 | Steam | 1002 | 44.99 | 2023-05-10 | https://store.steampowered.com/app/374320... |
| 7 | Epic Games | 1005 | 54.99 | 2023-05-22 | https://store.epicgames.com/en-US/p/battlefield... |
| 8 | GOG | 1006 | 12.99 | 2023-05-03 | https://www.gog.com/en/game/hollow_knight |
| 9 | Steam | 1007 | 29.99 | 2023-05-04 | https://store.steampowered.com/app/239140/... |
| 10 | Steam | 1007 | 19.99 | 2023-05-18 | https://store.steampowered.com/app/239140/... |
| 11 | Epic Games | 1008 | 39.99 | 2023-05-07 | https://store.epicgames.com/en-US/p/skyrim |
| 12 | GOG | 1008 | 29.99 | 2023-05-16 | https://www.gog.com/en/game/the_elder_scrol... |
| 13 | Steam | 1009 | 49.99 | 2023-05-08 | https://store.steampowered.com/app/397540/... |
| 14 | Epic Games | 1009 | 39.99 | 2023-05-26 | https://store.epicgames.com/en-US/p/borderla... |
| 15 | Steam | 1010 | 19.99 | 2023-05-02 | https://store.steampowered.com/app/1145360... |
| 16 | Epic Games | 1010 | 17.99 | 2023-05-24 | https://store.epicgames.com/en-US/p/hades |
| 17 | GOG | 1010 | 24.99 | 2023-05-12 | https://www.gog.com/en/game/hades |
| 18 | Steam | 1003 | 54.99 | 2023-05-14 | https://store.steampowered.com/app/1245620... |
| 19 | Epic Games | 1003 | 49.99 | 2023-05-27 | https://store.epicgames.com/en-US/p/elden-ring |
| 20 | GOG | 1004 | 49.99 | 2023-05-29 | https://www.gog.com/en/game/baldurs_gate_iii |
| 21 | Steam | 1002 | 11.99 | 2023-05-10 | https://store.steampowered.com/app/1091500... |

Purchasehistory

Table: **purchasehistory**

Columns:

| PurchaseID | int PK | | | | |
|-------------------|---------------|------|------------|------------|-------|
| UserID | int | | | | |
| GameID | int | | | | |
| DistributorName | varchar(255) | | | | |
| DatePurchased | date | | | | |
| PurchasePrice | decimal(10,2) | | | | |
| 1 | 1000 | 1000 | Steam | 2023-10-01 | 59.99 |
| 2 | 1000 | 1005 | Epic Games | 2023-10-01 | 54.95 |
| 3 | 1000 | 1003 | GOG | 2023-10-02 | 59.99 |
| 4 | 1001 | 1010 | Steam | 2023-10-02 | 24.99 |
| 5 | 1001 | 1004 | Epic Games | 2023-10-03 | 59.99 |
| 6 | 1001 | 1002 | GOG | 2023-10-03 | 59.99 |
| 7 | 1002 | 1001 | Steam | 2023-10-04 | 7.49 |
| 8 | 1002 | 1007 | Epic Games | 2023-10-05 | 24.99 |
| 9 | 1002 | 1009 | GOG | 2023-10-06 | 59.99 |
| 10 | 1003 | 1000 | Steam | 2023-10-06 | 59.99 |
| 11 | 1003 | 1006 | Epic Games | 2023-10-07 | 14.99 |
| 12 | 1003 | 1008 | GOG | 2023-10-08 | 39.99 |
| 13 | 1004 | 1002 | Steam | 2023-10-09 | 59.99 |
| 14 | 1004 | 1003 | Epic Games | 2023-10-10 | 59.99 |
| 15 | 1004 | 1005 | GOG | 2023-10-11 | 59.99 |
| 16 | 1005 | 1004 | Steam | 2023-10-11 | 59.99 |
| 17 | 1005 | 1006 | Epic Games | 2023-10-12 | 14.99 |
| 18 | 1005 | 1007 | GOG | 2023-10-12 | 49.99 |

Requestlist

Filter objects

- classicmodels
- gamepickerdb
 - Tables
 - currentprice
 - distributor
 - game
 - genre
 - pricehistory
 - purchasehistory
 - Columns
 - PurchaseID
 - UserID
 - GameID
 - DistributorName
 - DatePurchased
 - PurchasePrice
 - Indexes
 - Foreign Keys
 - Triggers
 - requestlist
 - userreview
 - users
 - userwishlist
 - Views
 - Stored Procedures
 - Functions
- hung_nguyen
- nguyen

Administration Schemas Information

Table: requestlist

Columns:

| RequestID | UserID | GameName | WebsiteURL | DateAdded |
|-----------|--------|--------------------------|--|------------|
| 1 | 1001 | Hogwarts Legacy | https://www.greenmangaming.com/games/hog... | 2023-10-01 |
| 7 | 1009 | game | http://localhost:8080/CS157APRoject_war_exp... | 2023-12-03 |
| 8 | 1009 | game | http://localhost:8080/CS157APRoject_war_exp... | 2023-12-03 |
| 9 | 1010 | game | http://localhost:8080/CS157APRoject_war_exp... | 2023-12-03 |
| 12 | 1010 | abc | https://drive.google.com/drive/u/4/recent | 2023-12-10 |
| 13 | 1010 | demo | hung.com | 2023-12-10 |
| 14 | 1010 | QuantumRealm Quest | www.QuantumRealmQuest.com | 2023-12-10 |
| 15 | 1010 | GalacticLegends Odyssey | www.GalacticLegendsOdyssey.com | 2023-12-10 |
| 16 | 1010 | MysticRealms Conquest | www.MysticRealmsConquest.com | 2023-12-10 |
| 17 | 1010 | CyberVortex Adventures | www.CyberVortexAdventures.com | 2023-12-10 |
| 18 | 1010 | ShadowStrike Saga | www.ShadowStrikeSaga.com | 2023-12-10 |
| 19 | 1009 | TitanForge Chronicles | www.TitanForgeChronicles.com | 2023-12-10 |
| 20 | 1008 | NexusEmpire Quest | www.NexusEmpireQuest.com | 2023-12-10 |
| 21 | 1010 | CelestialPulse Odyssey | www.CelestialPulseOdyssey.com | 2023-12-10 |
| 22 | 1007 | ElementalCrown Advent... | www.ElementalCrownAdventures.com | 2023-12-10 |
| 23 | 1007 | AstralVortex Conquest | www.AstralVortexConquest.com | 2023-12-10 |
| * | NULL | NULL | NULL | NULL |

Userreview

requestlist

userreview

- Columns
- Indexes

Administration Schemas Information

Table: userreview

Columns:

| ReviewID | UserID | GameID | Rating | ReviewDate | ReviewText |
|----------|--------|--------|--------|------------|---|
| 1 | 1000 | 1000 | 5 | 2023-09-06 | Absolutely loved this game! A must-buy for RPG... |
| 2 | 1001 | 1001 | 4 | 2023-09-08 | The storyline is captivating but some bugs here ... |
| 3 | 1002 | 1002 | 5 | 2023-09-09 | One of the best Souls games out there! |
| 4 | 1003 | 1003 | 3 | 2023-09-10 | The graphics are amazing but felt the storyline ... |
| 5 | 1004 | 1004 | 4 | 2023-09-11 | A classic revisited. Loved every moment. |
| 6 | 1005 | 1005 | 2 | 2023-09-12 | Too many glitches. Had higher expectations. |
| 7 | 1006 | 1006 | 5 | 2023-09-13 | A must-have for any strategy game lover. |
| 8 | 1000 | 1007 | 3 | 2023-09-14 | Good for casual gameplay. Not as immersive as ... |
| 9 | 1002 | 1008 | 4 | 2023-09-15 | An epic tale that kept me on the edge of my seat. |
| 10 | 1003 | 1009 | 5 | 2023-09-16 | Amazing multiplayer modes. Totally worth the p... |
| * | NULL | NULL | NULL | NULL | NULL |

Users

Administration Schemas Information

Table: users

Columns:

| UserID | Email | Username | Password | Admin |
|--------|---------------------------|-------------------|---------------|-------|
| 1000 | random1@example.com | random1 | R@nd0m#1 | 0 |
| 1001 | user1234@mail.com | user1234 | P@sswOrd1234 | 0 |
| 1002 | testemail55@gmail.com | testemail55 | SecurePass55 | 0 |
| 1003 | random@email.net | random | R3@llyR@nd0m | 0 |
| 1004 | projectuser77@outlook.com | projectuser77 | Pr0j3ctUs3r77 | 0 |
| 1005 | gamer99@yahoo.com | gamer99 | G@m3rP@ss99 | 0 |
| 1006 | demoemail22@hotmail.com | demoemail22 | D3m0P@ss22 | 0 |
| 1007 | hung1234@gmail.com | hung1234 | 1234 | 0 |
| 1008 | hung123@gmail.com | hung123@gmail.com | 1234 | 0 |
| 1009 | admin | admin | 1 | 1 |
| 1010 | a | abc | 123 | 0 |
| * | NULL | NULL | NULL | NULL |

Userwishlist

Administration Schemas Information

Table: userwishlist

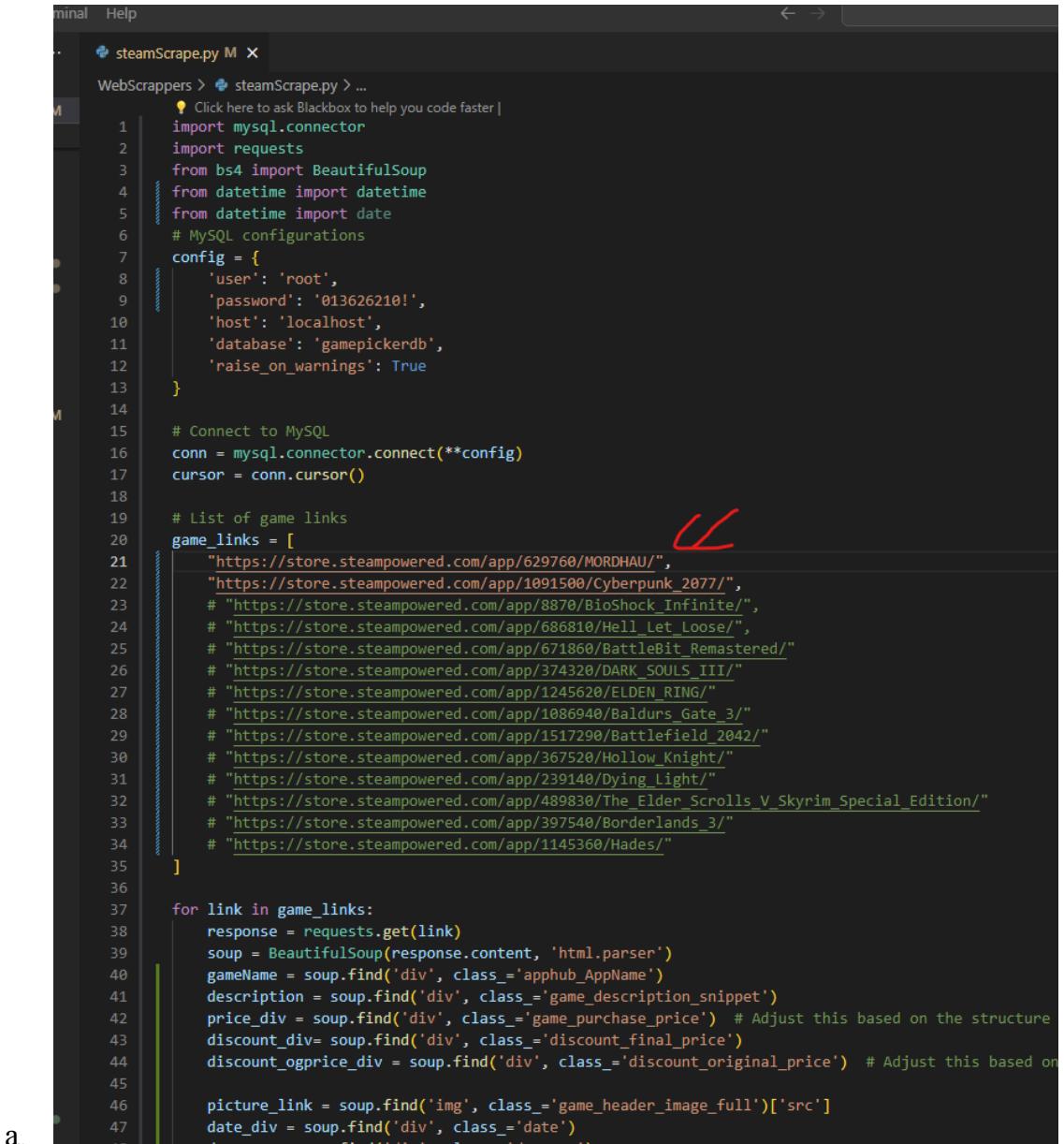
Columns:

| WishlistID | UserID | GameID | DateAdded |
|------------|--------|--------|------------|
| 1 | 1000 | 1000 | 2023-10-01 |
| 2 | 1000 | 1005 | 2023-10-01 |
| 3 | 1000 | 1003 | 2023-10-01 |
| 4 | 1001 | 1010 | 2023-10-01 |
| 5 | 1001 | 1004 | 2023-10-01 |
| 6 | 1001 | 1002 | 2023-10-01 |
| 7 | 1002 | 1001 | 2023-10-02 |
| 8 | 1002 | 1007 | 2023-10-03 |
| 9 | 1002 | 1009 | 2023-10-04 |
| 14 | 1010 | 1117 | 2023-12-05 |
| * | NULL | NULL | NULL |

Project Implementation Section

Bonus: Scripts to update prices/add new games into relation tables based on vendors (game, currentprice, pricehistory)

1. Run Steamscrape.py (we can turn this script into a lambda function that runs daily). In this context, Mordhau (the first link) doesn't exist in our game database. If game exists, the price will be updated in currentprice and pricehistory



```
mininal Help
steamScrape.py M X
WebScrapers > steamScrape.py > ...
M Click here to ask Blackbox to help you code faster |
1 import mysql.connector
2 import requests
3 from bs4 import BeautifulSoup
4 from datetime import datetime
5 from datetime import date
6 # MySQL configurations
7 config = {
8     'user': 'root',
9     'password': '013626210!',
10    'host': 'localhost',
11    'database': 'gamepickerdb',
12    'raise_on_warnings': True
13 }
14
15 # Connect to MySQL
16 conn = mysql.connector.connect(**config)
17 cursor = conn.cursor()
18
19 # List of game links
20 game_links = [
21     "https://store.steampowered.com/app/629760/MORDHAU/",
22     "https://store.steampowered.com/app/1091500/Cyberpunk_2077/",
23     "# https://store.steampowered.com/app/8870/BioShock_Infinite/",
24     "# https://store.steampowered.com/app/686810/Hell_Let_Loose/",
25     "# https://store.steampowered.com/app/671860/BattleBit_Remastered/"
26     "# https://store.steampowered.com/app/374320/DARK_SOULS_III/"
27     "# https://store.steampowered.com/app/1245620/ELDEN_RING/"
28     "# https://store.steampowered.com/app/1086940/Baldurs_Gate_3/"
29     "# https://store.steampowered.com/app/1517290/Battlefield_2042/"
30     "# https://store.steampowered.com/app/367520/Hollow_Knight/"
31     "# https://store.steampowered.com/app/239140/Dying_Light/"
32     "# https://store.steampowered.com/app/489830/The_Elder_Scrolls_V_Skyrim_Special_Edition/"
33     "# https://store.steampowered.com/app/397540/Borderlands_3/"
34     "# https://store.steampowered.com/app/1145360/Hades/"
35 ]
36
37 for link in game_links:
38     response = requests.get(link)
39     soup = BeautifulSoup(response.content, 'html.parser')
40     gameName = soup.find('div', class_='apphub_AppName')
41     description = soup.find('div', class_='game_description_snippet')
42     price_div = soup.find('div', class_='game_purchase_price') # Adjust this based on the structure
43     discount_div= soup.find('div', class_='discount_final_price')
44     discount_ogprice_div = soup.find('div', class_='discount_original_price') # Adjust this based on
45
46     picture_link = soup.find('img', class_='game_header_image_full')['src']
47     date_div = soup.find('div', class_='date')
```

a.

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content: |

Table: game

Columns:

| GameID | GameName | ReleaseDate | Developer | GenreID | Description |
|-------------|---|-------------|-----------------------------|-------------|-------------------------|
| 1000 | Cyberpunk 2077 | 2020-12-10 | Cd Projekt Red | 2 | Cyberpunk 2077 is an |
| 1001 | Bioshock Infinite | 2013-03-26 | Irrational Games | 5 | Indebted to the wrong |
| 1002 | Dark Souls 3 | 2023-10-01 | From Software | 6 | Dark Souls continues t |
| 1003 | Elden Ring | 2023-10-02 | From Software | 2 | Elden Ring is a 2022 a |
| 1004 | Baldur's Gate 3 | 2023-10-03 | Larian Studios | 2 | Baldur's Gate 3 is a r |
| 1005 | Battlefield 2042 | 2021-11-19 | Dice | 9 | Battlefield™ 2042 is a |
| 1006 | Hollow Knight | 2017-02-24 | Team Cherry | 5 | Forge your own path i |
| 1007 | Dying Light: Definitive Edition | 2021-05-27 | Techland | 3 | First-person action su |
| 1008 | The Elder Scrolls V: Skyrim Special Edition | 2016-10-28 | Bethesda Game Studios | 3 | Winner of more than 2 |
| 1009 | Borderlands 3 | 2019-09-13 | Gearbox Software | 9 | The original shooter-lc |
| 1010 | Hades | 2018-12-06 | Supergiant games | 10 | Defy the god of the d |
| 1022 | hung | 2023-11-27 | hung | 1 | Baldur's Gate 3 is a r |
| 1100 | World of Warships | 2017-11-15 | Wargaming Group Limited | 2 | Immerse yourself in th |
| 1102 | hunggo | 2023-12-02 | hung2 | 2 | this test |
| 1114 | Hell Let Loose | 2021-07-27 | Team17 | 5 | Join the ever expandi |
| 1115 | BattleBit Remastered | 2023-06-15 | SgtOkiDoki, Vilaskis, Th... | 5 | BattleBit Remastered i |
| 1121 | Medieval Dynasty | 2023-12-10 | Render Cude | 2 | Hunt, survive, build ar |
| NULL | NULL | NULL | NULL | NULL | NULL |

b.

2. Aftermath of the scripts running

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content: |

Table: game

Columns:

| GameID | GameName | ReleaseDate | Developer | GenreID | Description |
|-------------|---|-------------------|-----------------------------|-------------|----------------------------|
| 1000 | Cyberpunk 2077 | 2020-12-10 | Cd Projekt Red | 2 | Cyberpunk 2077 is an |
| 1001 | Bioshock Infinite | 2013-03-26 | Irrational Games | 5 | Indebted to the wrong |
| 1002 | Dark Souls 3 | 2023-10-01 | From Software | 6 | Dark Souls continues t |
| 1003 | Elden Ring | 2023-10-02 | From Software | 2 | Elden Ring is a 2022 a |
| 1004 | Baldur's Gate 3 | 2023-10-03 | Larian Studios | 2 | Baldur's Gate 3 is a r |
| 1005 | Battlefield 2042 | 2021-11-19 | Dice | 9 | Battlefield™ 2042 is a |
| 1006 | Hollow Knight | 2017-02-24 | Team Cherry | 5 | Forge your own path i |
| 1007 | Dying Light: Definitive Edition | 2021-05-27 | Techland | 3 | First-person action su |
| 1008 | The Elder Scrolls V: Skyrim Special Edition | 2016-10-28 | Bethesda Game Studios | 3 | Winner of more than 2 |
| 1009 | Borderlands 3 | 2019-09-13 | Gearbox Software | 9 | The original shooter-lc |
| 1010 | Hades | 2018-12-06 | Supergiant games | 10 | Defy the god of the d |
| 1022 | hung | 2023-11-27 | hung | 1 | Baldur's Gate 3 is a r |
| 1100 | World of Warships | 2017-11-15 | Wargaming Group Limited | 2 | Immerse yourself in th |
| 1102 | hunggo | 2023-12-02 | hung2 | 2 | this test |
| 1114 | Hell Let Loose | 2021-07-27 | Team17 | 5 | Join the ever expandi |
| 1115 | BattleBit Remastered | 2023-06-15 | SgtOkiDoki, Vilaskis, Th... | 5 | BattleBit Remastered i |
| 1121 | Medieval Dynasty | 2023-12-10 | Render Cude | 2 | Hunt, survive, build ar |
| 1122 | MORDHAU | 2019-04-29 | Triinternion | 5 | MORDHAU is a multip |
| NULL | NULL | NULL | NULL | NULL | NULL |

a.

Administration Schemas Information

Table: pricehistory

Columns:

| PriceHistoryID | DistributorName | GameID | Amount | DateUpdated | Link |
|----------------|-----------------|-------------|-------------|-------------|---|
| 140 | Steam | 1000 | 51.84 | 2023-05-29 | https://store.steampowered.com/agecheck/app... |
| 141 | Steam | 1000 | 41.50 | 2023-08-03 | https://store.steampowered.com/agecheck/app... |
| 142 | Steam | 1000 | 42.92 | 2023-07-20 | https://store.steampowered.com/agecheck/app... |
| 143 | Steam | 1000 | 54.97 | 2023-10-02 | https://store.steampowered.com/agecheck/app... |
| 144 | Steam | 1000 | 42.99 | 2023-10-06 | https://store.steampowered.com/agecheck/app... |
| 145 | Steam | 1000 | 55.94 | 2023-09-05 | https://store.steampowered.com/agecheck/app... |
| 146 | Steam | 1000 | 37.91 | 2023-09-22 | https://store.steampowered.com/agecheck/app... |
| 147 | Steam | 1000 | 46.64 | 2023-11-02 | https://store.steampowered.com/agecheck/app... |
| 148 | Steam | 1000 | 58.13 | 2023-11-15 | https://store.steampowered.com/agecheck/app... |
| 149 | Steam | 1000 | 35.84 | 2023-06-14 | https://store.steampowered.com/agecheck/app... |
| 150 | Steam | 1000 | 33.21 | 2023-07-04 | https://store.steampowered.com/agecheck/app... |
| 151 | Steam | 1000 | 54.48 | 2023-10-26 | https://store.steampowered.com/agecheck/app... |
| 152 | Steam | 1000 | 35.52 | 2023-08-18 | https://store.steampowered.com/agecheck/app... |
| 153 | Steam | 1000 | 56.99 | 2023-10-25 | https://store.steampowered.com/agecheck/app... |
| 154 | Steam | 1000 | 45.81 | 2023-10-08 | https://store.steampowered.com/agecheck/app... |
| 155 | Steam | 1000 | 52.63 | 2023-09-26 | https://store.steampowered.com/agecheck/app... |
| 156 | Steam | 1000 | 43.13 | 2023-07-08 | https://store.steampowered.com/agecheck/app... |
| 157 | Steam | 1000 | 48.66 | 2023-06-12 | https://store.steampowered.com/agecheck/app... |
| 158 | Steam | 1000 | 46.46 | 2023-10-09 | https://store.steampowered.com/agecheck/app... |
| 159 | Steam | 1000 | 32.25 | 2023-08-02 | https://store.steampowered.com/agecheck/app... |
| 160 | GOG | 1000 | 59.99 | 2023-12-05 | https://www.gog.com/en/game/cyberpunk_2077 |
| 162 | GOG | 1000 | 39.99 | 2023-12-05 | https://www.gog.com/en/game/cyberpunk_2077 |
| 165 | Steam | 1000 | 29.99 | 2023-12-05 | https://store.steampowered.com/app/1091500... |
| 166 | Steam | 1001 | 29.99 | 2023-12-05 | https://store.steampowered.com/app/8870/Bio... |
| 167 | Steam | 1114 | 29.24 | 2023-12-05 | https://store.steampowered.com/app/686810/... |
| 168 | Steam | 1121 | 10.00 | 2023-12-10 | https://store.steampowered.com/app/1129580... |
| 169 | Steam | 1122 | 29.99 | 2023-12-10 | https://store.steampowered.com/app/629760/... |
| 170 | Steam | 1000 | 29.99 | 2023-12-10 | https://store.steampowered.com/app/1091500... |
| NULL | NULL | NULL | NULL | NULL | NULL |

b.

c. Currentprice relation (Cyberpunk: ID 1000, Mordhau: ID 1122)

The screenshot shows the MySQL Workbench interface with the 'currentprice' table selected. The table has columns: PriceID, GameID, DistributorName, Amount, DateUpdated, and Link. The data shows rows for Cyberpunk (GameID 1000) and Mordhau (GameID 1122), both distributed by Steam at 29.99.

| | PriceID | GameID | DistributorName | Amount | DateUpdated | Link |
|---|---------|--------|-----------------|--------|-------------|---|
| ▶ | 1 | 1000 | Steam | 29.99 | 2023-12-10 | https://store.steampowered.com/app/109 |
| | 37 | 1121 | Steam | 10.00 | 2023-12-10 | https://store.steampowered.com/app/1122 |
| | 38 | 1122 | Steam | 29.99 | 2023-12-10 | https://store.steampowered.com/app/629 |
| * | NULL | NULL | NULL | NULL | NULL | NULL |

Table: **currentprice**

Columns:

- PriceID** int AI PK
- GameID** int
- DistributorName** varchar(255)
- Amount** decimal(10,2)
- DateUpdated** date
- Link** varchar(255)

i.

Create an Account

Before Account creation

The screenshot shows the MySQL Workbench interface with the 'users' table selected. The table has columns: UserID, Email, Username, Password, and Admin. It lists various user accounts, including an admin account.

| | UserID | Email | Username | Password | Admin |
|---|--------|---------------------------|-------------------|---------------|-------|
| ▶ | 1000 | random1@example.com | random | 123 | 0 |
| | 1001 | user1234@mail.com | user1234 | P@ssw0rd1234 | 0 |
| | 1002 | testemail55@gmail.com | testemail55 | SecurePass55 | 0 |
| | 1003 | random@email.net | random | R3@llyR@nd0m | 0 |
| | 1004 | projectuser77@outlook.com | projectuser77 | Pr0j3ctUs3r77 | 0 |
| | 1005 | gamer99@yahoo.com | gamer99 | G@m3rP@ss99 | 0 |
| | 1006 | demoemail22@hotmail.com | demoemail22 | D3m0P@ss22 | 0 |
| | 1007 | hung1234@gmail.com | hung1234 | 1234 | 0 |
| | 1008 | hung123@gmail.com | hung123@gmail.com | 1234 | 0 |
| | 1009 | admin | admin | 1 | 1 |
| | 1010 | a | abc | 123 | 0 |
| * | NULL | NULL | NULL | NULL | NULL |

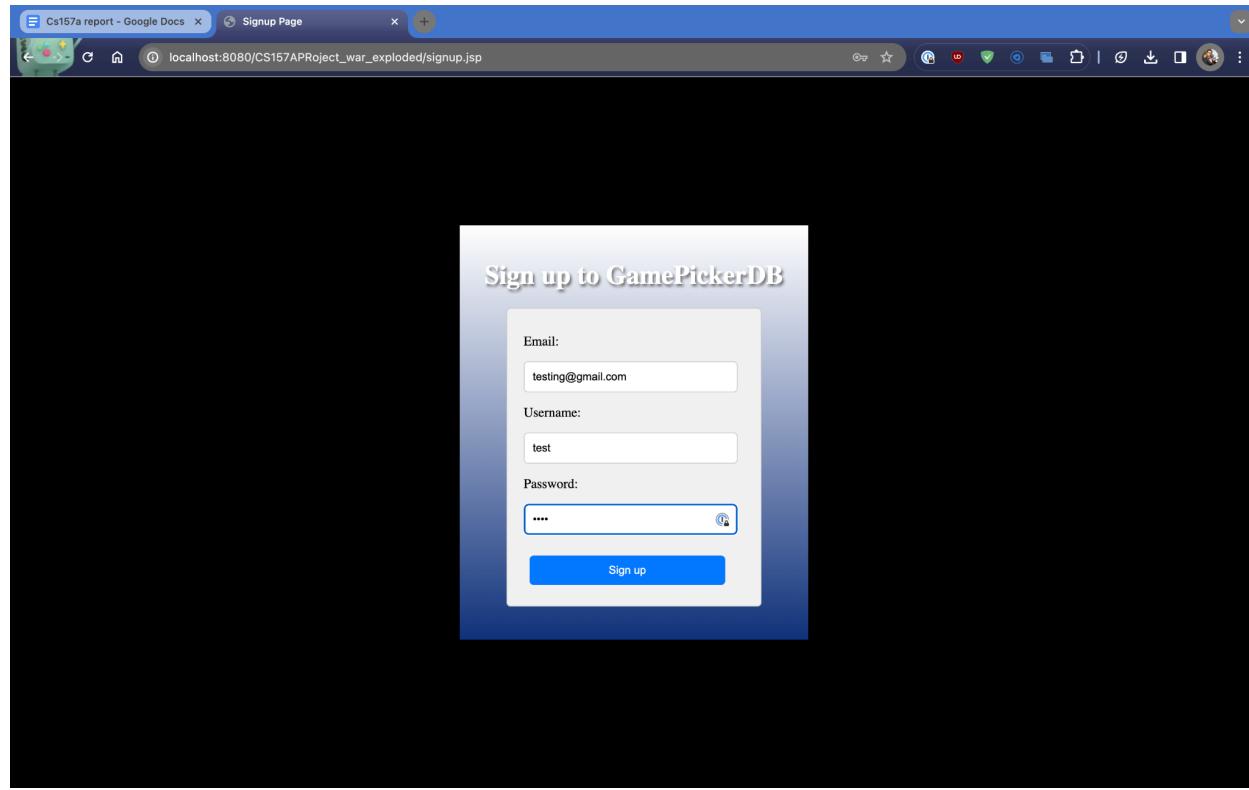
Table: **users**

Columns:

- UserID** int AI PK
- Email** varchar(255)
- Username** varchar(255)
- Password** varchar(255)
- Admin** tinyint

1.

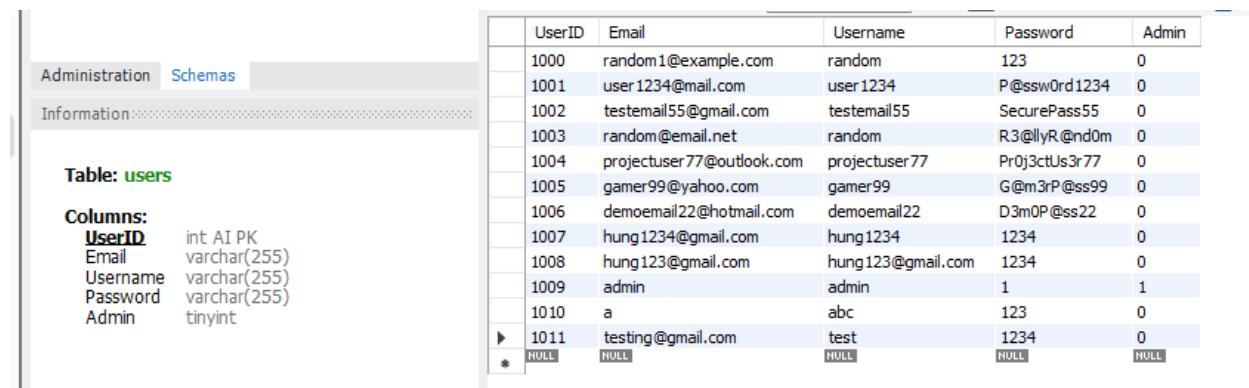
2. Sign up



The screenshot shows a web browser window with the title "Cs157a report - Google Docs" and the tab "Signup Page". The URL in the address bar is "localhost:8080/CS157APProject_war_exploded/signup.jsp". The main content area displays a sign-up form titled "Sign up to GamePickerDB". The form has fields for Email (testing@gmail.com), Username (test), and Password (....). A blue "Sign up" button is at the bottom.

a.

3. After account creation



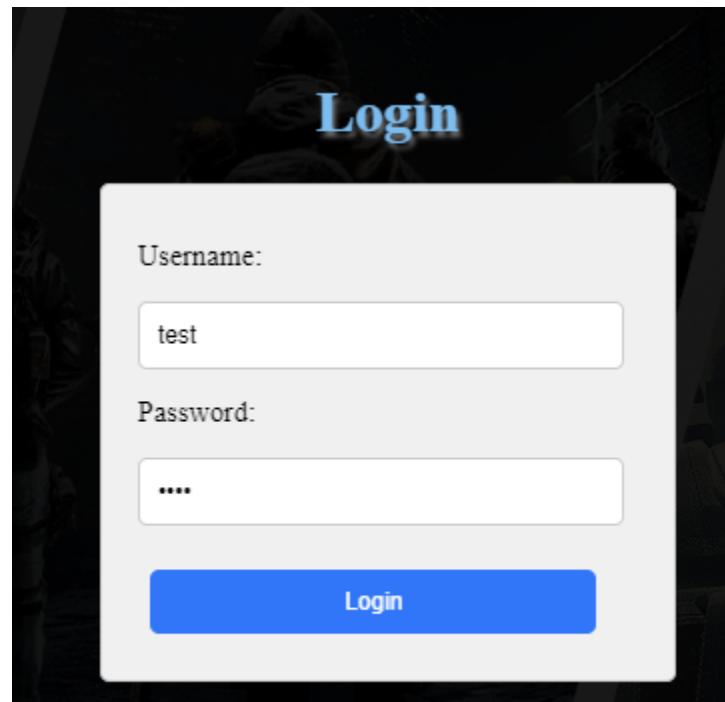
The screenshot shows a database management interface with tabs for "Administration" and "Schemas". The "Administration" tab is selected. In the center, there is a table named "users". The table has columns: UserID, Email, Username, Password, and Admin. The data in the table is as follows:

| | UserID | Email | Username | Password | Admin |
|------|---------------------------|-------------------|---------------|----------|-------|
| 1000 | random1@example.com | random | 123 | 0 | |
| 1001 | user1234@mail.com | user1234 | P@ssw0rd1234 | 0 | |
| 1002 | testemail55@gmail.com | testemail55 | SecurePass55 | 0 | |
| 1003 | random@email.net | random | R3@llyR@nd0m | 0 | |
| 1004 | projectuser77@outlook.com | projectuser77 | Proj3ctUs3r77 | 0 | |
| 1005 | gamer99@yahoo.com | gamer99 | G@m3rP@s99 | 0 | |
| 1006 | demoemail22@hotmail.com | demoemail22 | D3m0P@s922 | 0 | |
| 1007 | hung1234@gmail.com | hung1234 | 1234 | 0 | |
| 1008 | hung123@gmail.com | hung123@gmail.com | 1234 | 0 | |
| 1009 | admin | admin | 1 | 1 | |
| 1010 | a | abc | 123 | 0 | |
| 1011 | testing@gmail.com | test | 1234 | 0 | |
| * | NULL | NULL | NULL | NULL | NULL |

a.

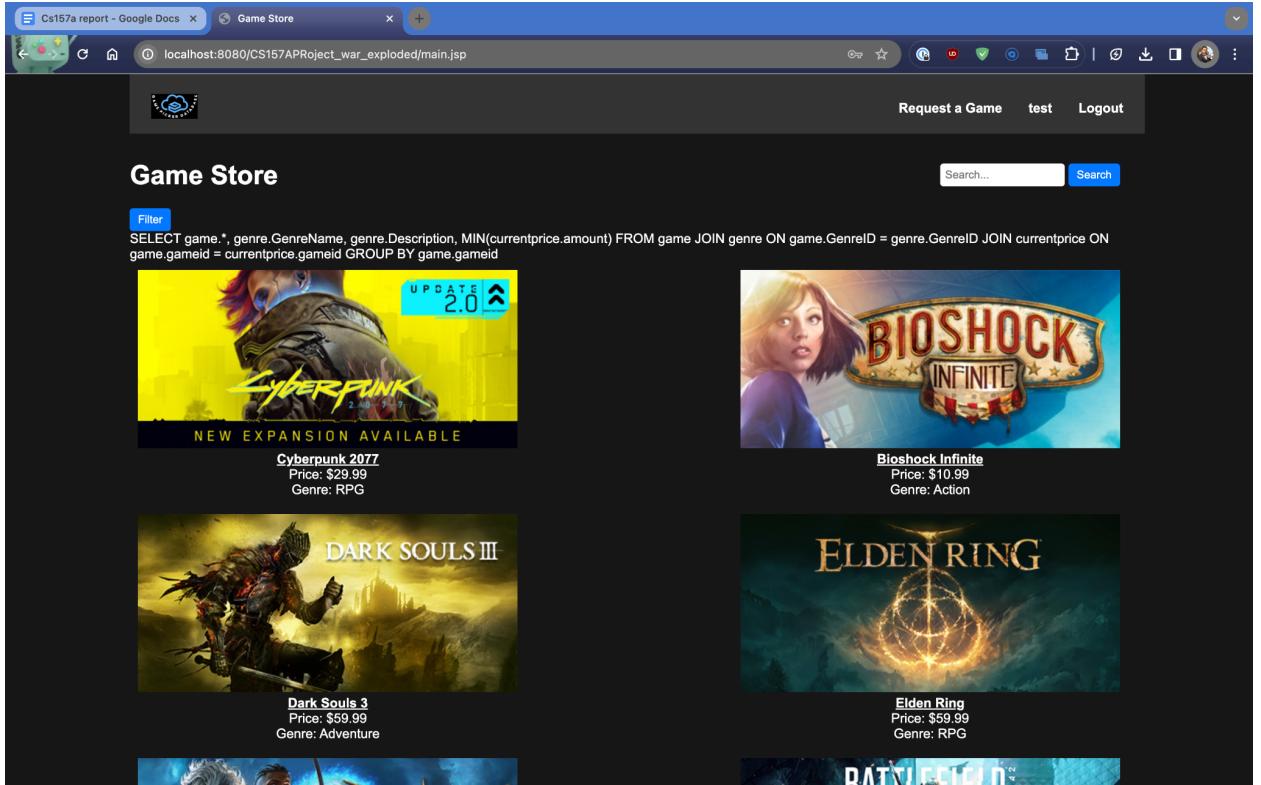
Login to an Account

1. Login with the newly created user account



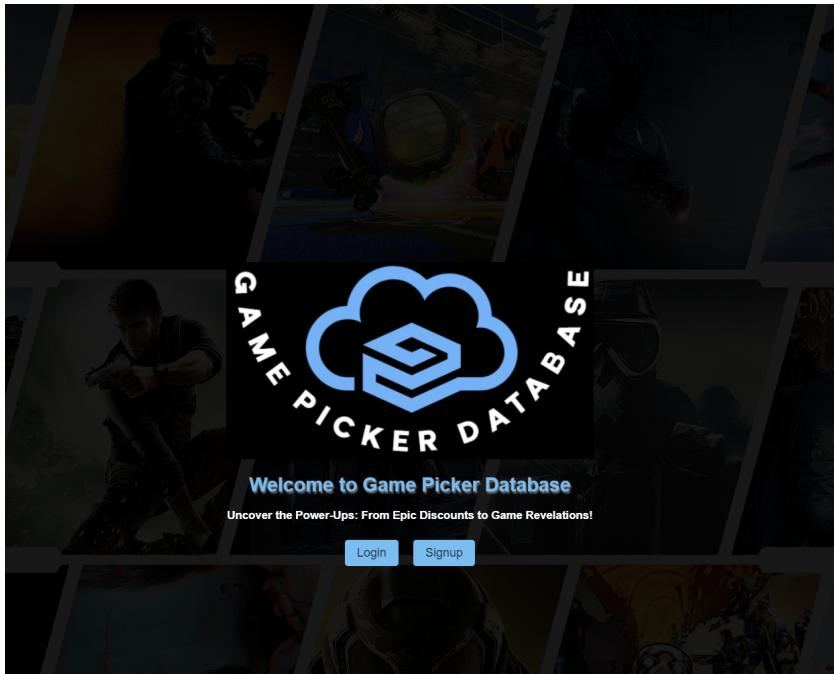
a.

2. Game store displayed after successful login



Logout of an Account

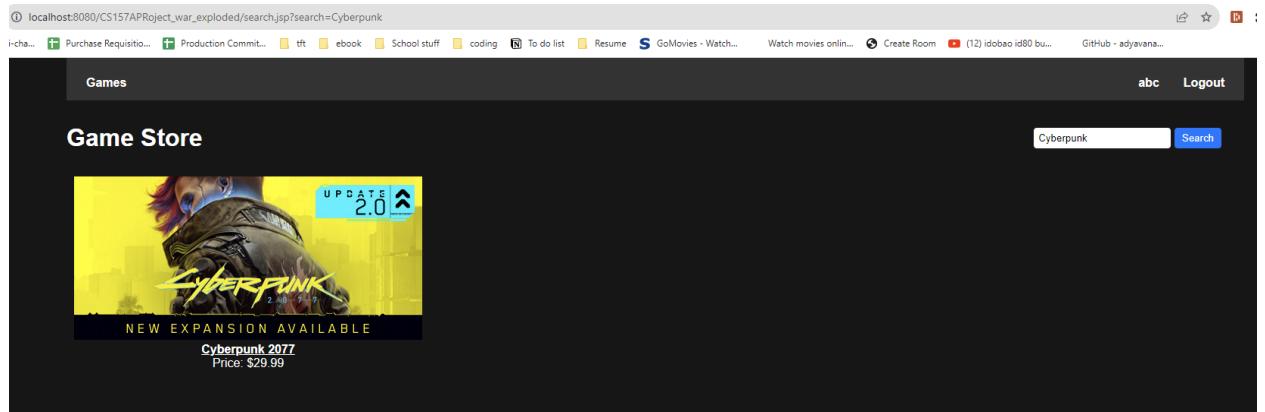
- Redirects to the homepage after logout



1.

Search for a Game

1. In this example, when a user types in “Cyberpunk”, the website will render search.jsp alongside with the returned results.



2. Search.jsp making the query and returning results

The screenshot shows a code editor with the file `search.jsp` open. The code is a JSP page that interacts with a MySQL database to search for games. It uses JDBC to execute a query that joins the `game`, `genre`, and `currentprice` tables. The results are then displayed as a list of game items, each with a thumbnail image, the game name, and a link to a detailed page. The code also handles exceptions and prints error messages to the console.

```
> host-manager
> manager
  addgame.jsp
  AddGameServlet.java
  addPurchase.jsp
  addToWishlist.jsp
  admin.jsp
  adminrequests.jsp
  background.png
  editgame-details.jsp
  fetchHistoricalPricing.jsp
  homepage.jsp
  index.jsp
  login.jsp
  logo.png
  logo2.png
  logo3.png
  logout.jsp
  main.jsp
  mysql-connector-j-8.0.33.jar
  removeFromWishlist.jsp
  removegame.jsp
  removerequest.jsp
  requestgames.jsp
  script.js
  search.jsp
  searchedGame.jsp
  signup.jsp
  submitReview.jsp
  updategame.jsp
  user.jsp
  web.xml
  test
  target
  .gitignore
  CS157APProject.iml

try {
    Class.forName("com.mysql.cj.jdbc.Driver");
    con = DriverManager.getConnection("jdbc:mysql://localhost:3306/gamepickendb?autoReconnect=true&useSSL=false", user, password);
    stmt = con.createStatement();
    String query = "SELECT game.*, genre.GenreName, genre.Description, MIN(currentprice.amount) | "
    "FROM game | "
    "JOIN genre ON game.GenreID = genre.GenreID | "
    "JOIN currentprice ON game.gameid = currentprice.gameid | "
    "WHERE (game.GameName LIKE ? OR genre.GenreName LIKE ?) | "
    "GROUP BY game.gameid";
    PreparedStatement pstmt = con.prepareStatement(query);
    pstmt.setString(1, "%" + gametitle + "%"); // Set the value of the parameter
    pstmt.setString(2, "%" + gametitle + "%");
    rs = pstmt.executeQuery();
    while (rs.next()) {
%>
<div class="game-item">
    " alt="<%= rs.getString("GameName") %>">
    <br>
    <a href="searchedGame.jsp?gameName=<%= rs.getString("GameName") %><%= rs.getString("GameName") %></a>
    <br>
    Price: $<s> rs.getString("min(currentprice.amount)") </s>
</div>
<%
    }
    rs.close();
    stmt.close();
    con.close();
} catch (SQLException e) {
    out.println("SQLException caught: " + e.getMessage());
    e.printStackTrace();
}
```

Request for a Game

1. Requestlist relation - Before

The screenshot shows a MySQL Workbench interface. At the top, there's a toolbar with various icons for database management. Below the toolbar, a query editor window contains the following SQL command:

```
1 •  SELECT * FROM gamepickerdb.requestlist;
```

Below the query editor is a result grid. The grid has a header row with columns: RequestID, UserID, GameName, WebsiteURL, and DateAdded. The data rows are as follows:

| | RequestID | UserID | GameName | WebsiteURL | DateAdded |
|---|-----------|--------|-----------------|---|------------|
| ▶ | 7 | 1009 | game | http://localhost:8080/CS157APRProject_war_exploded/ | 2023-12-03 |
| | 9 | 1010 | game | http://localhost:8080/CS157APRProject_war_exploded/ | 2023-12-03 |
| | 10 | 1010 | Hung | hung.com | 2023-12-04 |
| | 11 | 1000 | HungNguyen | steam.com/HungNguyen | 2023-12-05 |
| | 12 | 1000 | MarcoRodriguesz | asoidjasiod.com | 2023-12-05 |
| | 13 | 1001 | Hn | hung.com | 2023-12-10 |
| | 14 | 1001 | Marco | hung.com | 2023-11-04 |
| | 15 | 1002 | Cyb | cyb.com | 2023-11-22 |
| * | 16 | 1009 | 2012 | 2012.com | 2023-11-23 |
| * | | NULL | NULL | NULL | NULL |

2. User submits a game request to admin

Request a Game abc Logout

Game Store

Search... Search

Filter

SELECT game.*, genre.GenreName, genre.Description, MIN(currentprice.amount) FROM game JOIN genre ON game.GenreID = genre.GenreID JOIN currentprice ON game.gameid = currentprice.gameid GROUP BY game.gameid

Cyberpunk 2077
Price: \$29.99
Genre: RPG

Bioshock Infinite
Price: \$10.99
Genre: Action

Dark Souls 3
Price: \$59.99
Genre: Adventure

Elden Ring
Price: \$59.99
Genre: RPG

Submit

3. Requestlist relation - After

```
1 •  SELECT * FROM gamepickerdb.requestlist;
```

| | RequestID | UserID | GameName | WebsiteURL | DateAdded |
|---|-----------|--------|-----------------|---|------------|
| ▶ | 7 | 1009 | game | http://localhost:8080/CS157APRProject_war_exploded/ | 2023-12-03 |
| | 9 | 1010 | game | http://localhost:8080/CS157APRProject_war_exploded/ | 2023-12-03 |
| | 10 | 1010 | Hung | hung.com | 2023-12-04 |
| | 11 | 1000 | HungNguyen | steam.com/HungNguyen | 2023-12-05 |
| | 12 | 1000 | MarcoRodriguesz | asoidjasiod.com | 2023-12-05 |
| | 13 | 1001 | Hn | hung.com | 2023-12-10 |
| | 14 | 1001 | Marco | hung.com | 2023-11-04 |
| | 15 | 1002 | Cyb | cyb.com | 2023-11-22 |
| | 16 | 1009 | 2012 | 2012.com | 2023-11-23 |
| | 17 | 1010 | demo | hung.com | 2023-12-10 |
| * | NULL | NULL | NULL | NULL | NULL |

History Pricing

- When a game is selected at the bottom of the page a chart will be displayed with all the pricing. In the below, when searchedgame.jsp is accessed, fetchHistoricalPricing.jsp will also be called, fetching all the pricing for a game and return it in a json format.

a.

```

> examples
> host-manager
> manager
  > addgame.jsp
  > AddGameServlet.java
  > addPurchase.jsp
  > addToWishlist.jsp
  > admin.jsp
  > adminrequests.jsp
  > background.png
  > editgame-details.jsp
  > fetchHistoricalPricing.jsp
> homepage.jsp
> index.jsp
  
```

```

10   try {
11     Class.forName("com.mysql.cj.jdbc.Driver");
12     String url = "jdbc:mysql://localhost:3306/gamepickerdb?autoReconnect=true&useSSL=false";
13     String user = "root";
14     String password = "013626210!";
15     con = DriverManager.getConnection(url, user, password);
16
17     String query = "SELECT DateUpdated, Amount FROM pricehistory WHERE GameID = (SELECT GameID FROM game WHERE gameName = ?) ORDER BY DateUpdated";
18
19     pstmt = con.prepareStatement(query);
20     pstmt.setString(1, gametitle);
21     rs = pstmt.executeQuery();
  
```



Browse Games

- Once logged in, user can browse through existing list of games, their prices, titles, and genres
- Underneath the filter button, there is the sql query used to search these games

Game Store

Request a Game abc Logout

Search... Search

Filter

SELECT game.*, genre.GenreName, genre.Description, MIN(currentprice.amount) FROM game JOIN genre ON game.GenreID = genre.GenreID JOIN currentprice ON game.gameid = currentprice.gameid GROUP BY game.gameid

| | | |
|--|--|--|
| Cyberpunk 2077 Price: \$29.99 Genre: RPG | BioShock Infinite Price: \$10.99 Genre: Action | Dark Souls III Price: \$59.99 Genre: Adventure |
| Elden Ring Price: \$59.99 Genre: RPG | Baldur's Gate 3 Price: \$59.99 Genre: RPG | Battlefield 2042 Price: \$59.99 Genre: Shooter |
| Hollow Knight | Dying Light Good Night Good Luck | The Elder Scrolls V: Skyrim Special Edition |

Sort Games by Price

1. Users can sort the game by price by using the filtering function

Game Store

Filter

```
SELECT game.*, genre.GenreName, genre.Description, MIN(currentprice.amount) FROM game JOIN genre ON game.GenreID = genre.GenreID JOIN game.gameid = currentprice.gameid GROUP BY game.gameid
```

Filter by Genre:

- Action
- Adventure
- Casual
- Fighting
- FPS
- Openworld
- Platformer
- Rogue Like
- RPG
- RTS
- Shooter
- Simulations
- Sports
- Strategy
- Visual Novel

Filter by Price:

\$0 - \$20 None \$0 - \$20 \$21 - \$50 \$51 - \$69.99


Cyberpunk 2077
Price: \$29.99
Genre: RPG


Bioshock Infinite
Price: \$10.99
Genre: Action


Dark Souls III
Dark Souls 3
Price: \$59.99
Genre: Adventure


Elden Ring
Price: \$59.99
Genre: RPG


Battlefield

2. The query above shows the changes for each filter option being applied. In this case, Having and Between clauses were added to fetch the games in the price range.

Game Store

```
SELECT game.*, genre.GenreName, genre.Description, MIN(currentprice.amount) FROM game JOIN genre ON game.GenreID = genre.GenreID JOIN currentprice ON game.gameid = currentprice.gameid GROUP BY game.gameid HAVING MIN(currentprice.amount) BETWEEN 0 AND 20
```

| Game Title | Price | Genre |
|---|---------|-----------|
| Bioshock Infinite | \$10.99 | Action |
| Hollow Knight | \$14.99 | Action |
| Dying Light: Definitive Edition | \$8.99 | Openworld |
| The Elder Scrolls V: Skyrim Special Edition | \$9.99 | Openworld |
| World of Warships | \$0.00 | RPG |
| Google | \$3.00 | RPG |
| BattleBit Remastered | \$11.99 | Action |

Sort Games by Genre

1. Users can sort games by genre by allowing users to click on the genres listed on the left side

Game Store

Search... Search

Filter

SELECT game.*, genre.GenreName, genre.Description, MIN(currentprice.amount) FROM game JOIN genre ON game.GenreID = genre.GenreID JOIN game.gameId = currentprice.gameId GROUP BY game.gameId

X

Filter by Genre:

- Action
- Adventure
- Casual
- Fighting
- FPS
- Openworld
- Platformer
- Rogue Like
- RPG
- RTS
- Shooter
- Simulations
- Sports
- Strategy
- Visual Novel

Filter by Price:

None Order by:

None Filter


Cyberpunk 2077
Price: \$29.99
Genre: RPG


Bioshock Infinite
Price: \$10.99
Genre: Action


Dark Souls III
Price: \$59.99
Genre: Adventure


Elden Ring
Price: \$59.99
Genre: RPG


Baldur's Gate 3
Price: \$59.99
Genre: RPG


Battlefield 2042
Price: \$59.99
Genre: Shooter

2. SQL query underneath the filter button fetch the list of games that matches the genre names. This is done by joining genre, currentprice relations with the Game relation.

Game Store

Search

Filter

```
SELECT game.*, genre.GenreName, genre.Description, MIN(currentprice.amount) FROM game JOIN genre ON game.GenreID = genre.GenreID JOIN currentprice ON game.gameid = currentprice.gameid WHERE genre.GenreName IN ('Action', 'Adventure') GROUP BY game.gameid
```

The screenshot shows a game store interface with a dark theme. At the top, there's a search bar and a 'Sort Grid' button. Below that is a 'Filter' button. A SQL query is displayed in the middle of the page. The main content area displays five game entries:

- Bioshock Infinite**
Price: \$10.99
Genre: Action
- Dark Souls III**
Price: \$59.99
Genre: Adventure
- Hollow Knight**
Price: \$14.99
Genre: Action
- Hell Let Loose**
Price: \$29.24
Genre: Action
- BattleBit Remastered**
Price: \$11.99
Genre: Action

A red line highlights the 'Genre: Action' entry for each game.

Order by Alphabetical (A-Z, Z-A), Pricing (low to high, high to low)

1. Users can sort the game by Alphabetical or the pricing of the game titles. This feature can be used in conjunction with Filter by the range of game prices.

2. Order by Alphabetical

game.gameid = currentprice.gameid GROUP BY game.gameid

Filter by Genre:

- Action
- Adventure
- Casual
- Fighting
- FPS
- Openworld
- Platformer
- Rogue Like
- RPG
- RTS
- Shooter
- Simulations
- Sports
- Strategy
- Visual Novel

Filter by Price:

None

Order by:

A-Z
None
A-Z
Z-A
Low to High
High to Low

The screenshot shows a game store interface with a sidebar on the left containing filtering options. The sidebar includes a 'Filter by Genre' section with a list of 17 genre categories, a 'Filter by Price' dropdown set to 'None', and an 'Order by' dropdown set to 'Z-A'. A 'Filter' button is located at the bottom of the sidebar. To the right of the sidebar are four game cards: 'Cyberpunk 2077' (Price: \$29.99, Genre: RPG), 'Bioshock Infinite' (Price: \$10.99, Genre: Action), 'Dark Souls III' (Price: \$59.99, Genre: Adventure), and 'Elden Ring' (Price: \$59.99, Genre: RPG). The 'Bioshock Infinite' card is partially cut off on the right.

3. Results of sorting A-Z

Game Store

[Filter](#)

SELECT game.*, genre.GenreName, genre.Description, MIN(currentprice.amount) FROM game JOIN genre ON game.GenreID = genre.GenreID JOIN currentprice ON game.gameid = currentprice.gameid GROUP BY game.gameid ORDER BY game.GameName ASC

| Game Name | Genre | Price |
|----------------------|---------|---------|
| Baldur's Gate 3 | RPG | \$59.99 |
| BattleBit Remastered | Action | \$11.99 |
| Battlefield 2042 | Shooter | \$59.99 |
| Bioshock Infinite | Action | \$10.99 |
| Borderlands 3 | Shooter | \$59.99 |
| Cyberpunk 2077 | RPG | \$29.99 |

Search...

The screenshot shows a dark-themed game store interface. At the top, there's a search bar with placeholder text "Search..." and a blue "Search" button. Below the search bar is a SQL query: "SELECT game.*, genre.GenreName, genre.Description, MIN(currentprice.amount) FROM game JOIN genre ON game.GenreID = genre.GenreID JOIN currentprice ON game.gameid = currentprice.gameid GROUP BY game.gameid ORDER BY game.GameName ASC". The main content area displays six game entries in a grid-like layout. Each entry includes a thumbnail image, the game's name, its genre, and its price. There are also promotional banners for "FREE WEEKEND" and "UPDATE 2.0".

- Baldur's Gate 3**
Price: \$59.99
Genre: RPG
- BattleBit Remastered**
Price: \$11.99
Genre: Action
- Battlefield 2042**
Price: \$59.99
Genre: Shooter
- Bioshock Infinite**
Price: \$10.99
Genre: Action
- Borderlands 3**
Price: \$59.99
Genre: Shooter
- Cyberpunk 2077**
Price: \$29.99
Genre: RPG

BATTLE BIT REMASTERED
FREE WEEKEND

BIOSHOCK INFINITE

UPDATE 2.0

NEW EXPANSION AVAILABLE

4. Result of sorting Low to high pricing with price range from \$0-\$20

Game Store

Filter

Search...
Search

```
SELECT game.*, genre.GenreName, genre.Description, MIN(currentprice.amount) FROM game JOIN genre ON game.GenreID = genre.GenreID JOIN currentprice ON game.gameid = currentprice.gameid GROUP BY game.gameid HAVING MIN(currentprice.amount) BETWEEN 0 AND 20 ORDER BY MIN(currentprice.amount) ASC
```



[World of Warships](#)
Price: \$0.00
Genre: RPG



[hunggo](#)
Price: \$3.00
Genre: RPG



[The Elder Scrolls V: Skyrim Special Edition](#)
Price: \$9.99
Genre: Openworld



[Dying Light: Definitive Edition](#)
Price: \$8.99
Genre: Openworld



[Bioshock Infinite](#)
Price: \$10.99
Genre: Action



[BattleBit Remastered](#)
Price: \$11.99
Genre: Action



[Hollow Knight](#)
Price: \$14.99

Buy game

- Before buying a game in user page

The screenshot shows a web browser window titled "User Profile" for the user "admin". The page has a dark theme. At the top right are links for "Request a Game", "admin", and "Logout". Below the header is a "User Profile: admin" section. Underneath it is a "Wishlist" section, which is currently empty. The next section is "Purchase History", which lists a single purchase: "Cyberpunk 2077" purchased on "2023-12-05" for "\$59.99". Below that is a "Reviews" section, also currently empty.

- From the searched game page select Bioshock and click GOG

The screenshot shows a web browser window titled "Searched Game Information" for the game "Bioshock Infinite". The page has a dark theme. At the top right are links for "admin" and "Logout". On the left, there is a sidebar with game details: Release Date (2013-03-26), Developer (Irrational Games), GenreName (Action), Rating (3.3333), and GameID (1001). To the right of the sidebar is a large image of the game's cover art, which features a woman looking over her shoulder with the title "BIOSHOCK INFINITE" prominently displayed. Below the cover art is a paragraph of text describing the game: "Indebted to the wrong people, with his life on the line, veteran of the U.S. Cavalry and now hired gun, Booker DeWitt has only one opportunity to wipe his slate clean. He must rescue Elizabeth, a mysterious girl imprisoned since childhood and locked up in the flying city of Columbia." At the bottom of the sidebar is a blue "Add to Wishlist" button. The main content area is titled "Vendors" and lists three purchase options:

| Vendor | Price | Buy |
|------------|---------|---------------------|
| GOG | \$10.99 | Buy |
| Steam | \$29.99 | Buy |
| Epic Games | \$54.97 | Buy |

- You will be redirected to the GOG website to purchase the game. Please go back to the page after the redirection by click the back arrow in the top left corner. And please go to the user page after to see the purchase history addition

User Profile: admin

Wishlist

Purchase History

| Game | Date Purchased | Amount |
|-------------------|----------------|---------|
| Bioshock Infinite | 2023-12-10 | \$10.99 |
| Cyberpunk 2077 | 2023-12-05 | \$59.99 |

Reviews

View Game Details

1. Searchedgame.jsp will render the game page, where the details of a game is displayed such as the cheapest prices at the current time for each vendor, descriptions of the game, the historical pricing, comments, and reviews.

The screenshot shows a game page for "Cyberpunk 2077". At the top right are "abc" and "Logout" buttons. A search bar with placeholder "Search..." and a "Search" button is on the right. The main title "Cyberpunk 2077" is in blue. To the right is a large image of the game's cover art featuring a character's face and the text "UPDATE 2.0" and "NEW EXPANSION AVAILABLE". Below the title are game details:

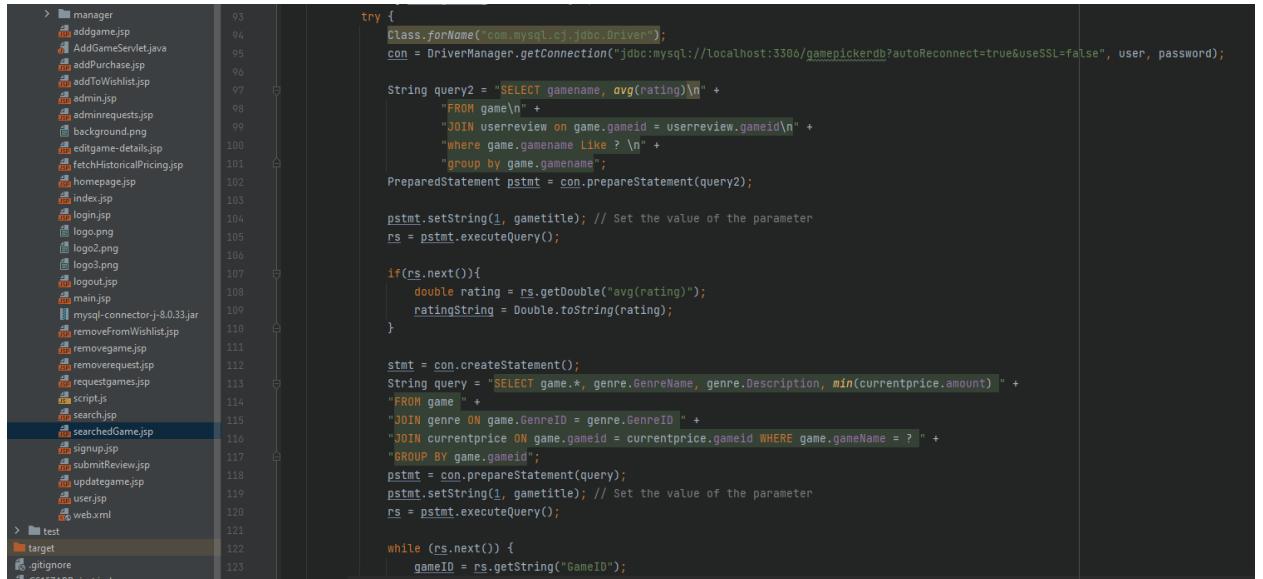
| | |
|--------------|-------------------------|
| Price | \$29.99 (50.01% off) |
| Release Date | 2020-12-10 |
| Developer | Cd Projekt Red |
| GenreName | RPG |
| Rating | 4.6667 |
| GameID | 1000 |

A paragraph describes the game as an open-world, action-adventure RPG set in the dark future of Night City. Below the details is a "Add to Wishlist" button. The next section, "Vendors", lists purchase links for Steam, GOG, and Epic Games.

| Vendor | Price | Buy |
|------------|---------|---------------------|
| Steam | \$29.99 | Buy |
| GOG | \$39.99 | Buy |
| Epic Games | \$59.99 | Buy |

The "Reviews for Cyberpunk 2077" section shows three reviews from users "random", "abc", and "abc". Each review includes a rating and a short comment. Below this is a "Leave a Review" form with a text area, a "Rating (1-5):" dropdown, and a "Review:" input field. A "Submit Review" button is at the bottom. The final section, "Historical Pricing", displays a line graph showing price fluctuations over time from May 1 to December 10, with a legend for "Price History (USD)".

2. The query used to render the webpage (the descriptions). This file also contains queries to render the rest of the functional requirements. Photos of queries will be attached in their respective features.



```

try {
    Class.forName("com.mysql.cj.jdbc.Driver");
    con = DriverManager.getConnection("jdbc:mysql://localhost:3306/gamepickerdb?autoReconnect=true&useSSL=false", user, password);

    String query2 = "SELECT gamename, avg(rating) \n" +
        "FROM game \n" +
        "JOIN userreview ON game.gameid = userreview.gameid \n" +
        "where game.gamename Like ? \n" +
        "group by game.gamename";
    PreparedStatement pstmt = con.prepareStatement(query2);

    pstmt.setString(1, gametitle); // Set the value of the parameter
    rs = pstmt.executeQuery();

    if(rs.next()){
        double rating = rs.getDouble("avg(rating)");
        ratingString = Double.toString(rating);
    }

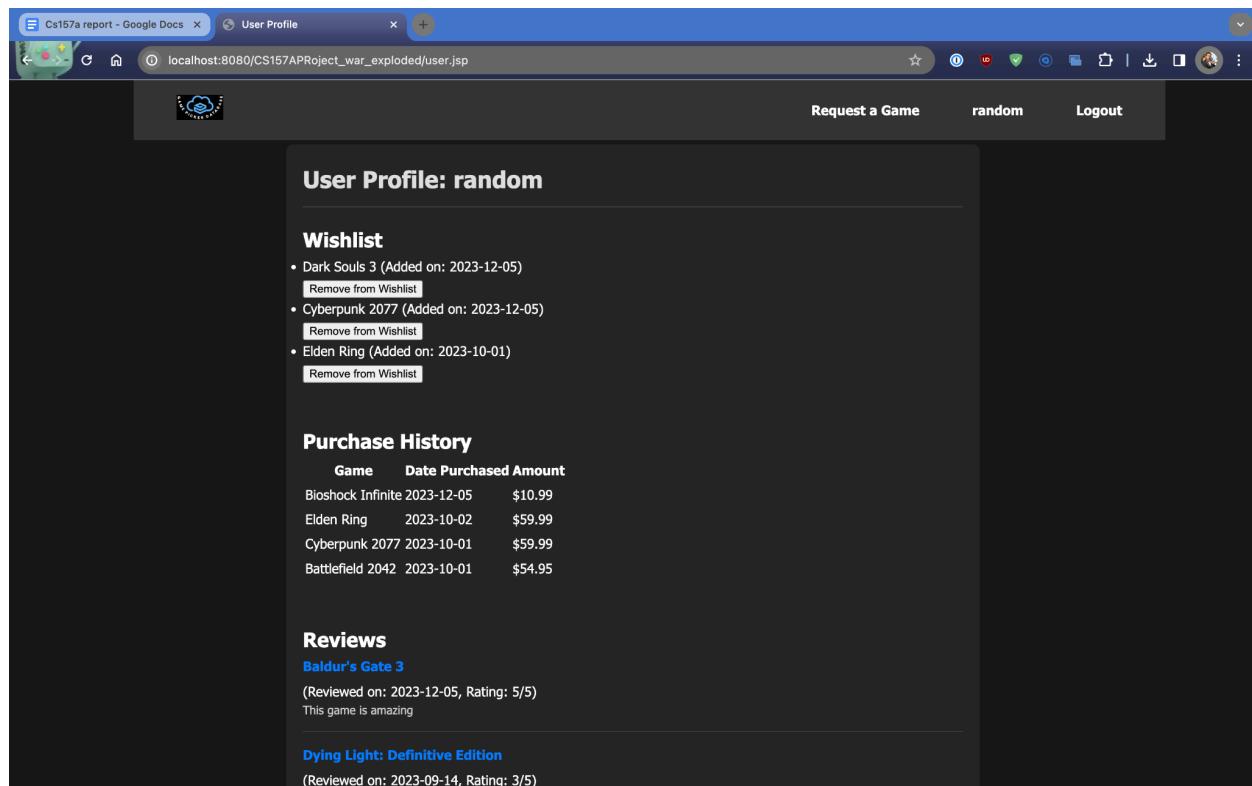
    stmt = con.createStatement();
    String query = "SELECT game.*, genre.GenreName, genre.Description, min(currentprice.amount) " +
    "FROM game " +
    "JOIN genre ON game.GenreID = genre.GenreID " +
    "JOIN currentprice ON game.gameid = currentprice.gameid WHERE game.gameName = ? " +
    "GROUP BY game.gameid";
    pstmt = con.prepareStatement(query);
    pstmt.setString(1, gametitle); // Set the value of the parameter
    rs = pstmt.executeQuery();

    while (rs.next()) {
        gameID = rs.getString("GameID");
    }
}

```

User Profile Page: Favorite Listing, Track Purchase History, User Reviews

1. User.jsp will send queries to userwishlist, purchasehistory, and userreview relations to get back the user informations and display it on the user profile.



| Game | Date Purchased | Amount |
|-------------------|----------------|---------|
| Bioshock Infinite | 2023-12-05 | \$10.99 |
| Elden Ring | 2023-10-02 | \$59.99 |
| Cyberpunk 2077 | 2023-10-01 | \$59.99 |
| Battlefield 2042 | 2023-10-01 | \$54.95 |

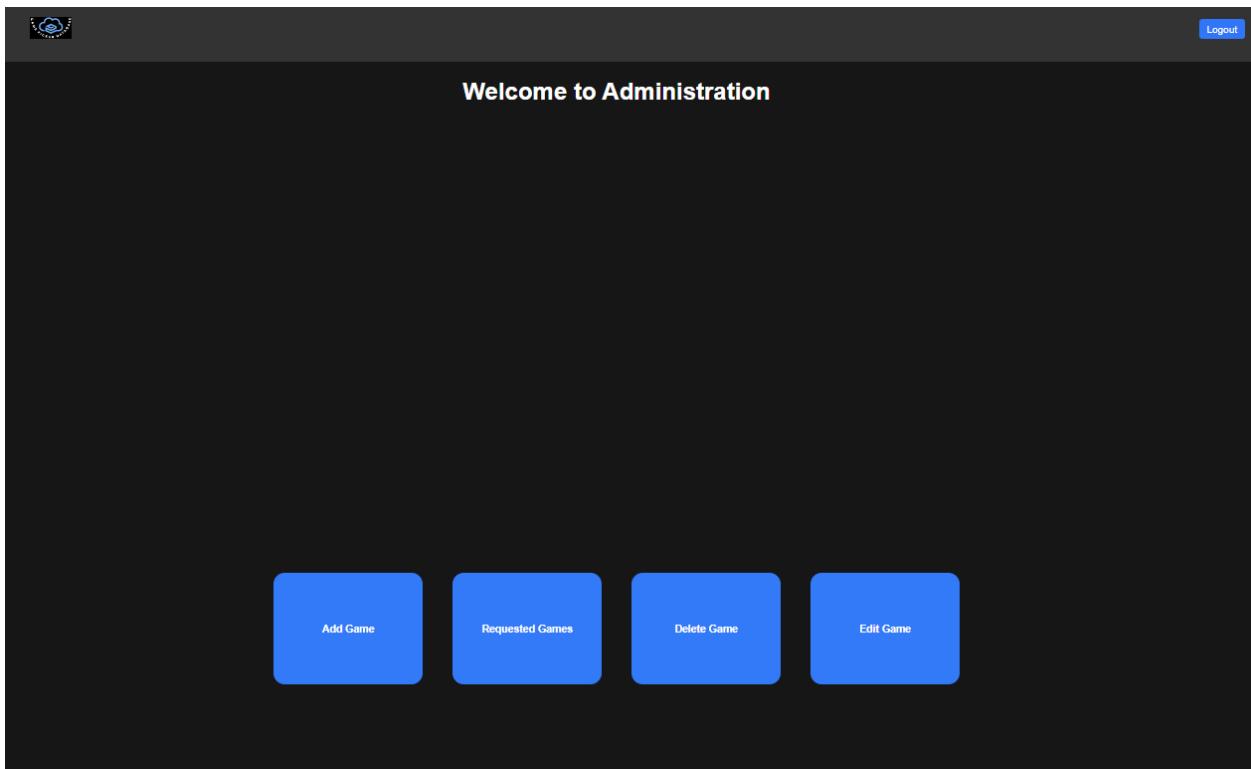
Reviews

Baldur's Gate 3
 (Reviewed on: 2023-12-05, Rating: 5/5)
 This game is amazing

Dying Light: Definitive Edition
 (Reviewed on: 2023-09-14, Rating: 3/5)

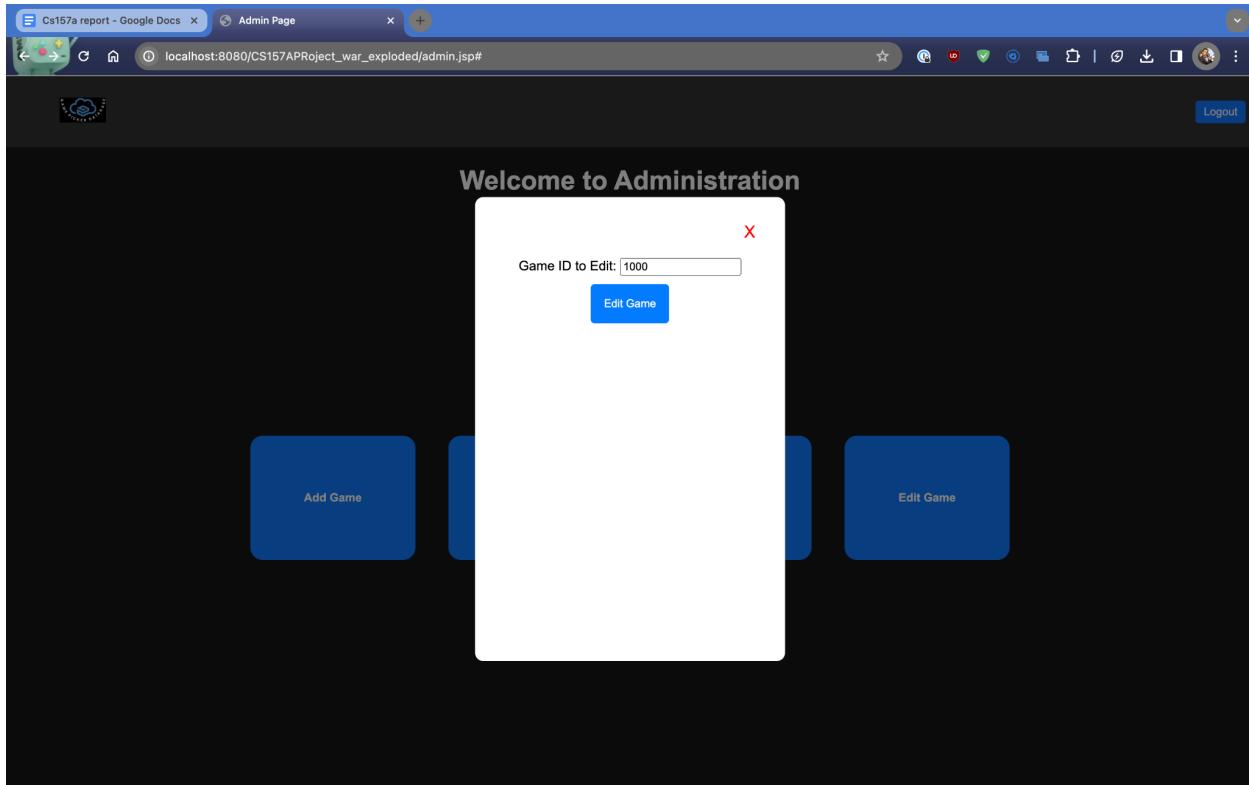
Admin Features

- This is the main screen that admins will see when logged in.

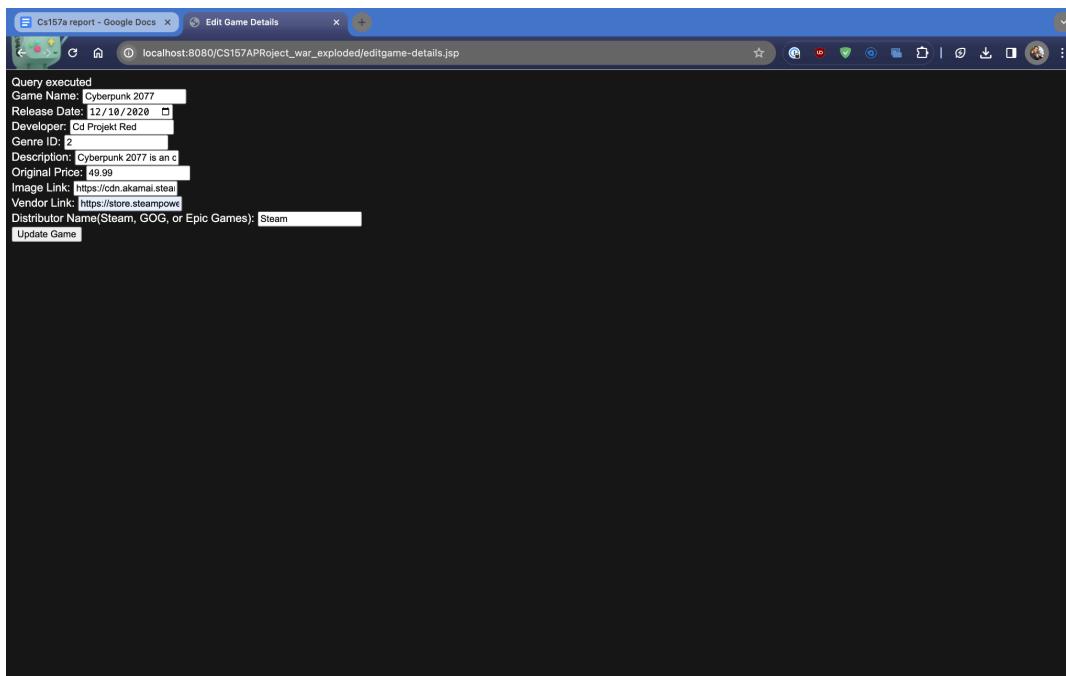


Update Listing

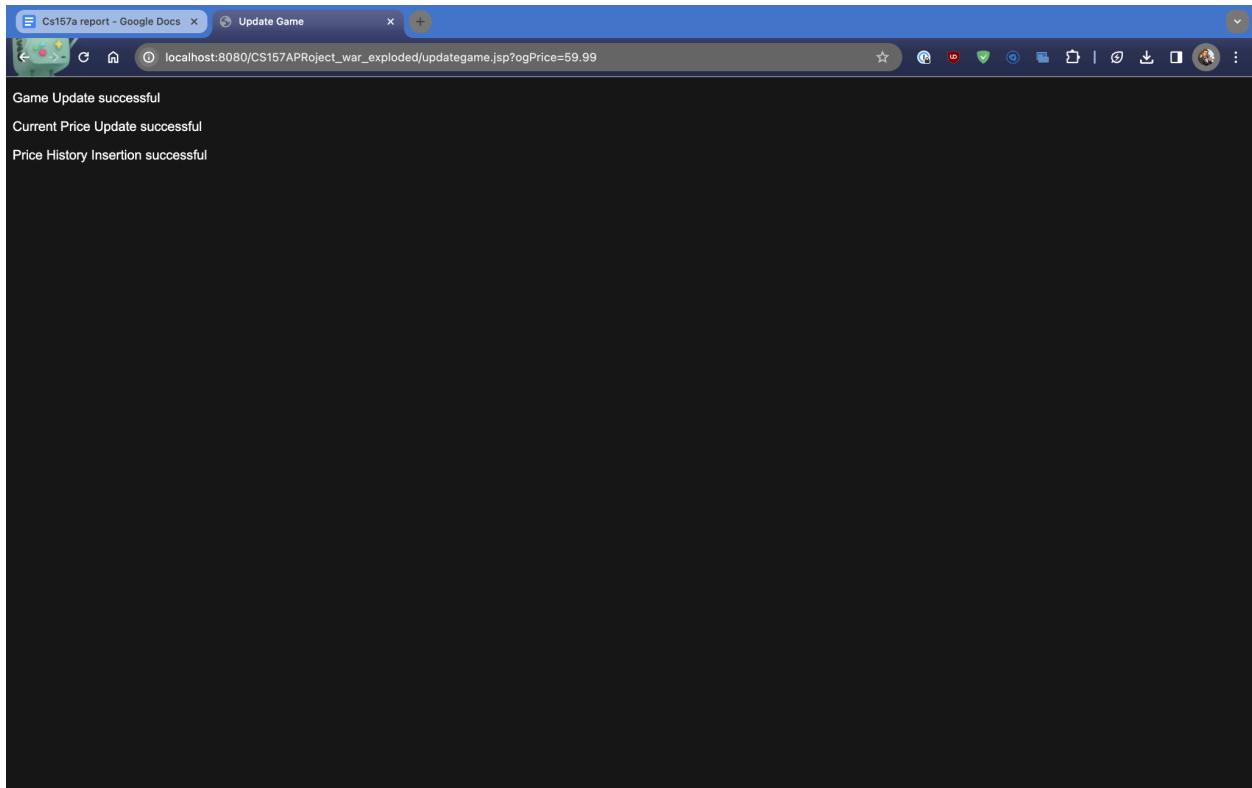
- Click Edit game details and enter 1000



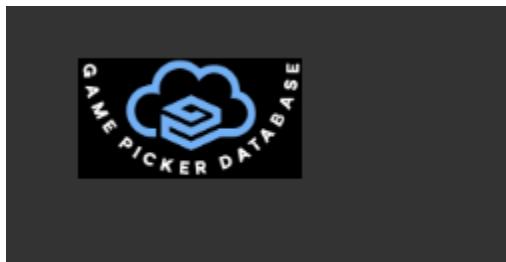
- Changing Price of CyberPunk (GameID: 1000) to \$19.99



- Greeted to this page after. Go back to go to dbpage



- Use back arrows until you reach admin page and click this on the top right



- Select Cyberpunk and now you see new view of \$19.99

Screenshot of a web browser showing game information for Cyberpunk 2077. The page includes details like Price (\$19.99), Release Date (2020-12-10), Developer (Cd Projekt Red), Genre (RPG), Rating (4.6667), GameID (1000), and a promotional image for the game.

Cyberpunk 2077

| | |
|--------------|--------------------------|
| Price | \$19.99 (\$6.68% off) |
| Release Date | 2020-12-10 |
| Developer | Cd Projekt Red |
| GenreName | RPG |
| Rating | 4.6667 |
| GameID | 1000 |

Cyberpunk 2077 is an open-world, action-adventure RPG set in the dark future of Night City — a dangerous megalopolis obsessed with power, glamor, and ceaseless body modification.

Add to Wishlist

Vendors

| Vendor | Price | Buy |
|--------|---------|-----|
| Steam | \$19.99 | Buy |

Screenshot of a MySQL Workbench interface showing a query results grid for the currentprice table. The results show various game entries with their prices, dates, and links.

```
1 • SELECT * FROM gamepickerdb.currentprice;
```

| PriceID | GameID | DistributorName | Amount | DateUpdated | Link |
|---------|--------|-----------------|--------|-------------|--|
| 2 | 1001 | Steam | 29.99 | 2023-12-05 | https://store.steampowered.com/app/8870/BioS... |
| 3 | 1002 | Steam | 59.99 | 2023-10-01 | https://store.steampowered.com/app/374320... |
| 4 | 1003 | Steam | 59.99 | 2023-10-01 | https://store.steampowered.com/app/1245620/E... |
| 5 | 1004 | Steam | 59.99 | 2023-10-01 | https://store.steampowered.com/app/1086940/B... |
| 6 | 1005 | Steam | 59.99 | 2023-10-01 | https://store.steampowered.com/app/1517290/B... |
| 7 | 1006 | Steam | 14.99 | 2023-10-01 | https://store.steampowered.com/app/367520/Ho... |
| 8 | 1007 | Steam | 8.99 | 2023-10-01 | https://store.steampowered.com/app/239140/Dy... |
| 9 | 1008 | Steam | 39.99 | 2023-10-01 | https://store.steampowered.com/app/498830/... |
| 10 | 1009 | Steam | 59.99 | 2023-10-01 | https://store.steampowered.com/app/367540/Bz... |
| 11 | 1010 | Steam | 24.99 | 2023-10-01 | https://store.steampowered.com/app/1086940/B... |
| 13 | 1001 | Epic Games | 54.97 | 2023-10-14 | https://epicgamesdb.info/p1891e4da4a4ab95... |
| 14 | 1005 | Epic Games | 59.99 | 2023-10-14 | https://epicgamesdb.info/pa85bd01b67184fc8... |
| 15 | 1007 | Epic Games | 24.99 | 2023-10-14 | https://epicgamesdb.info/p9769a2dd4f4539... |
| 16 | 1008 | Epic Games | 39.99 | 2023-10-14 | https://epicgamesdb.info/p2d837b8ee7b434... |
| 17 | 1009 | Epic Games | 59.99 | 2023-10-14 | https://epicgamesdb.info/pd845909e1504c48... |
| 18 | 1010 | Epic Games | 24.99 | 2023-10-14 | https://epicgamesdb.info/p2zaed62223d4b69... |
| 20 | 1001 | GOG | 19.99 | 2023-10-01 | https://www.gog.com/en/game/bioshock_infinite... |
| 21 | 1004 | GOG | 59.99 | 2023-10-01 | https://www.gog.com/en/game/bioshock_infinite... |
| 22 | 1006 | GOG | 14.99 | 2023-10-01 | https://www.gog.com/en/game/hollow_knight... |
| 23 | 1007 | GOG | 49.99 | 2023-10-01 | https://www.gog.com/en/game/dying_light_defin... |
| 24 | 1008 | GOG | 9.99 | 2023-10-01 | https://www.gog.com/en/game/the_elder_scrolls... |
| 25 | 1022 | Steam | 22.00 | 2023-11-27 | https://store.steampowered.com/app/1966720/L... |
| 27 | 1100 | Steam | 19.99 | 2017-11-15 | https://store.steampowered.com/app/552990/W... |
| 29 | 1102 | Steam | 3.00 | 2023-12-02 | https://www.google.com/... |
| 30 | 1114 | Steam | 29.94 | 2023-12-02 | https://store.steampowered.com/app/8886104e... |
| 31 | 1115 | Steam | 19.99 | 2023-12-02 | https://store.steampowered.com/app/2671660/... |
| 36 | 1120 | Steam | 39.99 | 2023-12-05 | https://store.steampowered.com/app/292030/T... |
| 37 | 1000 | Steam | 19.99 | 2023-12-10 | https://store.steampowered.com/appcheck/app/... |

currentprice 1

Action Output c

Time Action Response Duration / Fetch Time

2 16:32:04 SELECT * FROM gamepickerdb.currentprice LIMIT 0, 1000 27 row(s) returned 0.0013 sec / 0.00001...

Query Completed

- SQL code to get details

```
// Update game table
String sql = "UPDATE game SET gameName = ?, releaseDate = ?, Developer = ?, GenreID = ?, Description = ?, Link = ?, OriginalPrice = ? WHERE GameID = ?";
PreparedStatement pstmt = con.prepareStatement(sql);
pstmt.setString(1, gameName);
pstmt.setString(2, releaseDate);
pstmt.setString(3, developer);
pstmt.setInt(4, genreID);
pstmt.setString(5, description);
pstmt.setString(6, imgLink);
pstmt.setDouble(7, ogprice);
pstmt.setInt(8, editGameID);
```

Add Listing

1. Game Relation before game insertion
2. Add game form with details input

The screenshot shows a user interface for managing game listings. In the center, a white modal dialog box is titled "Add Game". It contains fields for entering game details: Game Name (Medieval Dynasty), Release Date (12/10/2023), Developer (Render Cude), Genre ID (2), Description (Hunt, survive, build and lead), Price (10), Image link (<https://cdn.cloudflare.steam>), Vendor link (<https://store.steampowered>), and Vendor (Steam). A blue "Submit" button is at the bottom right of the form. In the background, there are three dark blue rounded rectangular buttons labeled "Add Game", "Edit Game", and another partially visible "Edit Game" button. The overall theme is dark with light-colored UI elements.

Add Game

Game Name: Medieval Dynasty

Release Date: 12/10/2023

Developer: Render Cude

Genre ID: 2

Description: Hunt, survive, build and lead

Price: 10

Image link: <https://cdn.cloudflare.steam>

Vendor link: <https://store.steampowered>

Vendor: Steam

Submit

Add Game

Edit Game

3. Game Relation after added

Administration Schemas Information

Table: game

Columns:

| GameID | GameName | ReleaseDate | Developer | GenreID | Description |
|--------|---|-------------|----------------------------|---------|--------------------------|
| 1000 | Cyberpunk 2077 | 2020-12-10 | Cd Projekt Red | 2 | Cyberpunk 2077 is an |
| 1001 | Bioshock Infinite | 2013-03-26 | Irrational Games | 5 | Indebted to the wrong |
| 1002 | Dark Souls 3 | 2023-10-01 | From Software | 6 | Dark Souls continues t |
| 1003 | Elden Ring | 2023-10-02 | From Software | 2 | Elden Ring is a 2022 a |
| 1004 | Baldur's Gate 3 | 2023-10-03 | Larian Studios | 2 | Baldur's Gate 3 is a rol |
| 1005 | Battlefield 2042 | 2021-11-19 | Dice | 9 | Battlefield™ 2042 is a |
| 1006 | Hollow Knight | 2017-02-24 | Team Cherry | 5 | Forge your own path i |
| 1007 | Dying Light: Definitive Edition | 2021-05-27 | Techland | 3 | First-person action su |
| 1008 | The Elder Scrolls V: Skyrim Special Edition | 2016-10-28 | Bethesda Game Studios | 3 | Winner of more than 2 |
| 1009 | Borderlands 3 | 2019-09-13 | Gearbox Software | 9 | The original shooter-ic |
| 1010 | Hades | 2018-12-06 | Supergiant games | 10 | Defy the god of the d |
| 1022 | hung | 2023-11-27 | hung | 1 | Baldur's Gate 3 is a ro |
| 1100 | World of Warships | 2017-11-15 | Wargaming Group Limited | 2 | Immerse yourself in th |
| 1102 | hunggo | 2023-12-02 | hung2 | 2 | this test |
| 1114 | Hell Let Loose | 2021-07-27 | Team17 | 5 | Join the ever expandi |
| 1115 | BattleBit Remastered | 2023-06-15 | SgtOkDoki, Vilaskis, Th... | 5 | BattleBit Remastered i |
| 1121 | Medieval Dynasty | 2023-12-10 | Render Cude | 2 | Hunt, survive, build an |
| * | NULL | NULL | NULL | NULL | NULL |

4. View game details

Medieval Dynasty

Search

| | |
|--------------|-------------|
| Price | \$10.00 |
| Release Date | 2023-12-10 |
| Developer | Render Cude |
| GenreName | RPG |
| Rating | No Ratings |
| GameID | 1121 |

A promotional image for Medieval Dynasty featuring two characters in traditional medieval attire. One character is a woman in a blue dress, and the other is a man in a green tunic. They are standing in a lush, green landscape with a castle in the background. A banner across the middle of the image reads "CO-OP UPDATE AVAILABLE NOW".

Hunt, survive, build and lead in the harsh Middle Ages: Create your own Medieval Dynasty and ensure its long-lasting prosperity or die trying! Play alone or team up with friends to enjoy the ultimate medieval experience.

[Add to Wishlist](#)

Vendors

| Vendor | Price | Buy |
|--------|---------|---------------------|
| Steam | \$10.00 | Buy |

Reviews for Medieval Dynasty

[Leave a Review](#)

Rating (1-5): Review: [Submit Review](#)

Historical Pricing

Price History (USD)

A line graph titled "Price History (USD)" showing the price of the game over time. The y-axis is labeled "Price (USD)" and ranges from 9.5 to 10.5. The x-axis is labeled "Date Updated" and shows a single data point for "Dec 10". The price is listed as \$10.00.

Remove Listing

1. Admin can remove an existing game based on their game id

The screenshot shows a game listing page for "The Witcher® 3: Wild Hunt". At the top, there's a search bar with a placeholder "Search..." and a "Search" button. Below the search bar is a large image of Geralt of Rivia from the game. To the left of the image, the game title "The Witcher® 3: Wild Hunt" is displayed in bold. Below the title is a table of game details:

| | |
|--------------|----------------|
| Price | \$39.99 |
| Release Date | 2015-05-18 |
| Developer | CD PROJEKT RED |
| GenreName | RPG |
| Rating | No Ratings |
| GameID | 1120 |

Below the table is a descriptive paragraph: "You are Geralt of Rivia, mercenary monster slayer. Before you stands a war-torn, monster-infested continent you can explore at will. Your current contract? Tracking down Ciri — the Child of Prophecy, a living weapon that can alter the shape of the world." A blue "Add to Wishlist" button is located below this text.

The next section is titled "Vendors" and shows a table with one row for Steam:

| Vendor | Price | Buy |
|--------|---------|-----|
| Steam | \$39.99 | Buy |

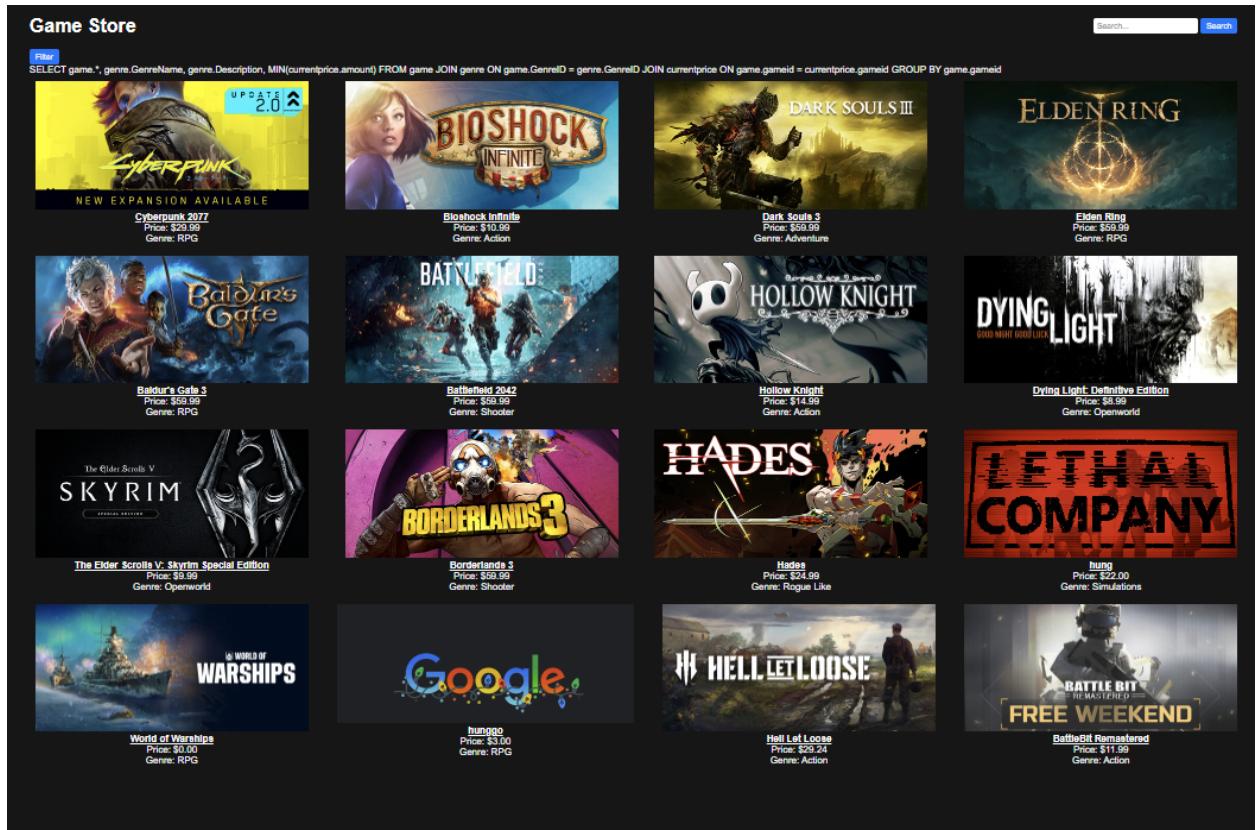
Below the vendor table is a section titled "Reviews for The Witcher® 3: Wild Hunt" with a "Leave a Review" button. There's also a "Rating (1-5):" input field and a "Review:" text area, followed by a "Submit Review" button.

The final section is titled "Historical Pricing" and contains a chart showing price history over time. The chart has a y-axis labeled "Price [USD]" with values 36, 38, 40, 42 and an x-axis labeled "Date" with a single data point for "Dec 5 Date Updated". A legend indicates the green line represents "Price History (USD)".

2. Inserting the game ID to the Delete Game form

A modal dialog box titled "Delete Game" is shown. It contains a text input field labeled "Game ID to Remove:" with the value "1120" and a blue "Submit" button. In the top right corner of the dialog, there is a red "X" button for closing the dialog.

3. The witcher (GameID: 1120) has been deleted from the game store



Request Listing

1. Admin will see all the requests that users have submitted. Based on the “Request Game” feature above, you can see ticket 17 being rendered on the admin page.

| Games Requested | | | | |
|--|--|--|---|--|
| Requested By: 7 User ID: 1008 Game Name: game Website: http://localhost:3001/CS/7/Pages/game.html Date Requested: 2023-12-02 Remove from list | Requested By: 9 User ID: 1010 Game Name: game Website: http://localhost:3001/CS/9/Pages/game.html Date Requested: 2023-12-03 Remove from list | Requested By: 10 User ID: 1010 Game Name: Hung Website: hung.com Date Requested: 2023-12-04 Remove from list | Requested By: 11 User ID: 1000 Game Name: HungNguyen Website: www.zomhungnguyen.com Date Requested: 2023-12-06 Remove from list | Requested By: 12 User ID: 1000 Game Name: MerviRodriguez Website: MerviRodriguez.com Date Requested: 2023-12-06 Remove from list |
| Requested By: 13 User ID: 1001 Game Name: Hn Website: hung.com Date Requested: 2023-12-10 Remove from list | Requested By: 14 User ID: 1001 Game Name: Maroo Website: hung.com Date Requested: 2023-11-04 Remove from list | Requested By: 15 User ID: 1002 Game Name: Cyb Website: cyb.com Date Requested: 2023-11-22 Remove from list | Requested By: 16 User ID: 1009 Game Name: 2012 Website: 2012.com Date Requested: 2023-11-25 Remove from list | Requested By: 17 User ID: 1010 Game Name: demo Website: hung.com Date Requested: 2023-12-10 Remove from list |

2. Game Requested page after ticket 17 was removed

| Games Requested | | | | |
|--|--|---|---|---|
| Requested By: 7 UserID: 1008 Game Name: game Website: http://localhost:8080/CS157APProject_war_exploded/game Date Requested: 2023-12-03 Remove from list | Requested By: 9 UserID: 1010 Game Name: game Website: http://localhost:8080/CS157APProject_war_exploded/game Date Requested: 2023-12-03 Remove from list | Requested By: 10 UserID: 1010 Game Name: Hung Website: hung.com Date Requested: 2023-12-04 Remove from list | Requested By: 11 UserID: 1000 Game Name: HungNguyen Website: steam.com/HungNguyen Date Requested: 2023-12-06 Remove from list | Requested By: 12 UserID: 1000 Game Name: MarcoRodriguesz Website: asoidjasiod.com Date Requested: 2023-12-06 Remove from list |
| Requested By: 13 UserID: 1001 Game Name: Hn Website: hung.com Date Requested: 2023-12-10 Remove from list | Requested By: 14 UserID: 1001 Game Name: Marco Website: hung.com Date Requested: 2023-11-04 Remove from list | Requested By: 15 UserID: 1002 Game Name: Cyb Website: cyb.com Date Requested: 2023-11-22 Remove from list | Requested By: 16 UserID: 1008 Game Name: 2012 Website: 2012.com Date Requested: 2023-11-23 Remove from list | |

3. Relation updates

| Result Grid | | | | | | |
|--|-----------|--------|-----------------|--|------------|--|
| Filter Rows: Edit: Edit Insert Delete Update Select Import Export Wrap Cell Content | | | | | | |
| | RequestID | UserID | GameName | WebsiteURL | DateAdded | |
| ▶ | 7 | 1009 | game | http://localhost:8080/CS157APProject_war_exploded/game | 2023-12-03 | |
| | 9 | 1010 | game | http://localhost:8080/CS157APProject_war_exploded/game | 2023-12-03 | |
| | 10 | 1010 | Hung | hung.com | 2023-12-04 | |
| | 11 | 1000 | HungNguyen | steam.com/HungNguyen | 2023-12-05 | |
| | 12 | 1000 | MarcoRodriguesz | asoidjasiod.com | 2023-12-05 | |
| | 13 | 1001 | Hn | hung.com | 2023-12-10 | |
| | 14 | 1001 | Marco | hung.com | 2023-11-04 | |
| | 15 | 1002 | Cyb | cyb.com | 2023-11-22 | |
| | 16 | 1009 | 2012 | 2012.com | 2023-11-23 | |
| * | NULL | NULL | NULL | NULL | NULL | |

Administration Schemas Information

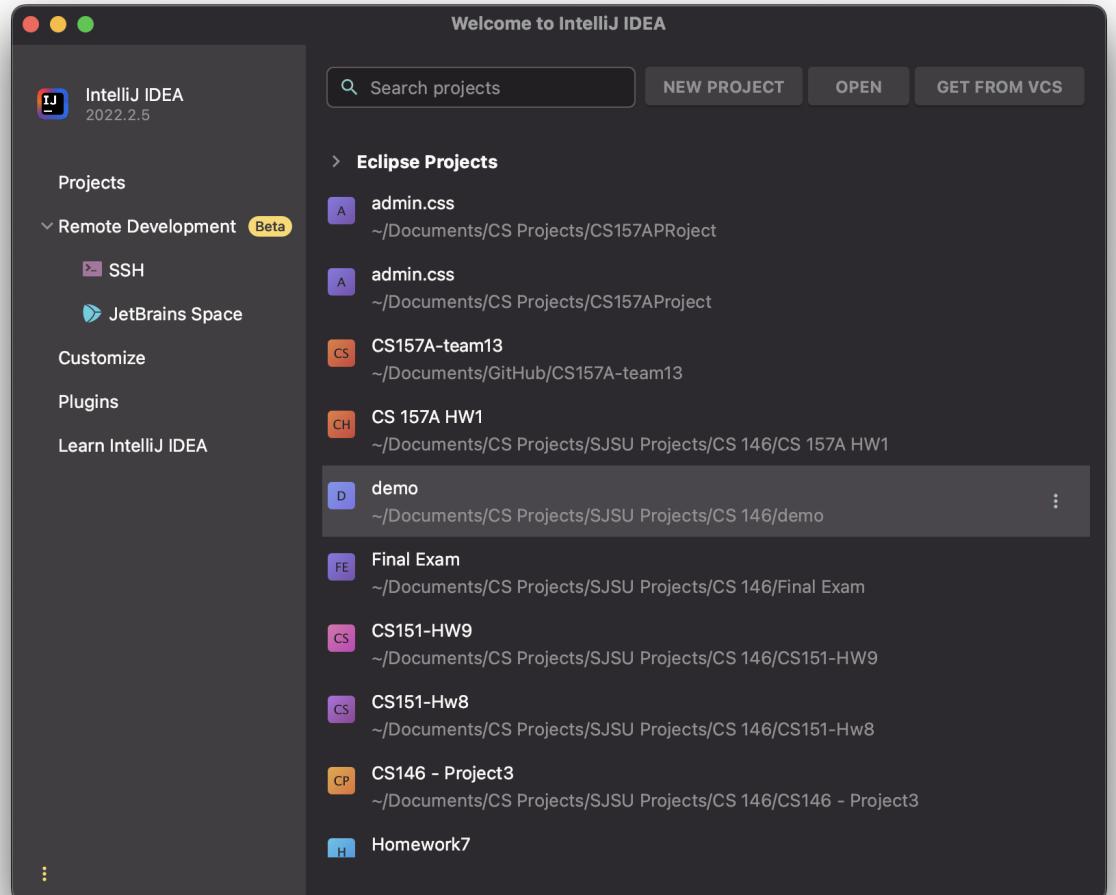
Table: requestlist

Columns:

- RequestID int AI PK
- UserID int
- GameName varchar(255)
- WebsiteURL varchar(255)
- DateAdded date

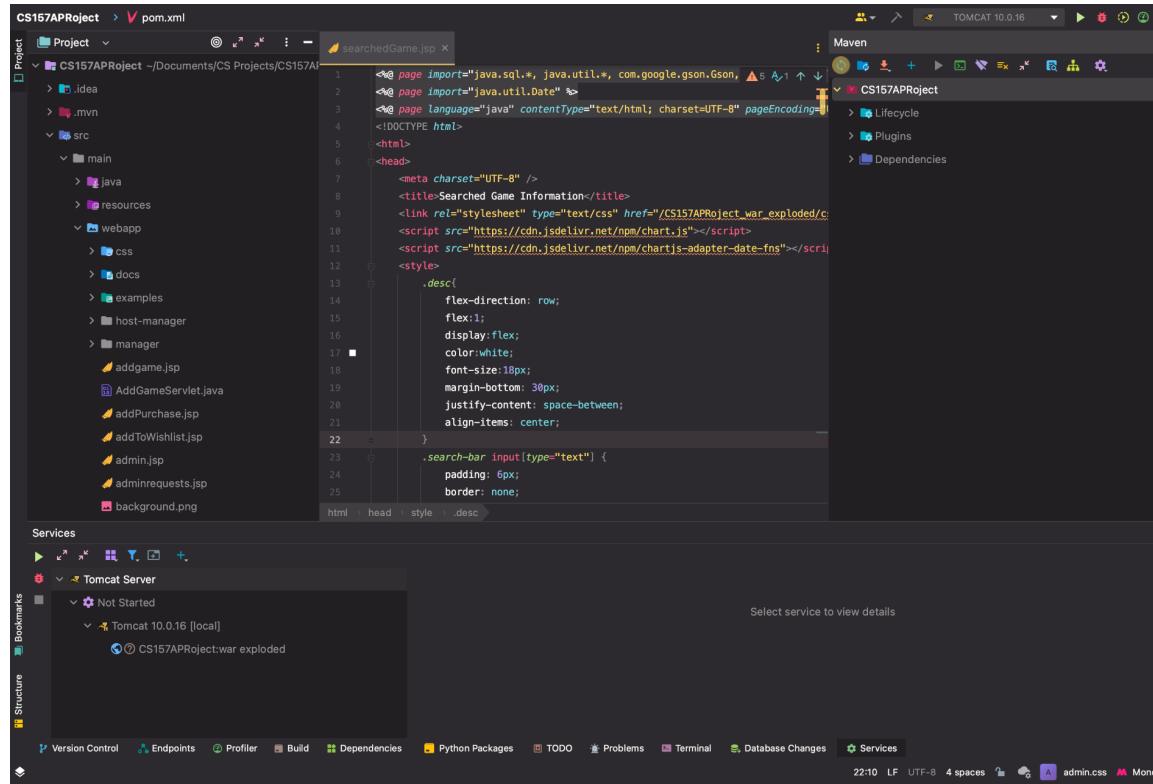
Steps to run the application

1. Unzip the file Team13_Project.zip
2. Launch IntelliJ and open a project



- a.
- b. Inside of the zip you will find a folder called CS157APProject select that project to open

- The package will launch as a Jakartee 9 project. Update your dependencies by selecting maven on the right hand side and clicking the circle highlighted



The screenshot shows the IntelliJ IDEA interface with the following details:

- Project:** CS157APProject
- Maven:** Maven tool window is open, showing the project structure.
- Code Editor:** The file "searchedGame.jsp" is open, displaying JSP code with some CSS styles.
- Services:** Services tool window shows a Tomcat Server entry under "Not Started".
- Bottom Bar:** Shows tabs like Version Control, Endpoints, Profiler, Build, Dependencies, Python Packages, TODO, Problems, Terminal, Database Changes, and Services.

a.

- As well go to the edit configuration and select the apache tomcat server provided in the zip file. As well the JAVA version SDK 17+
- Run the project and you will be launched to the homepage
- If running in to trouble connecting to database edit your username and password with this SQL query in mysql workbench
 - RENAME USER 'current_username'@'localhost' TO 'root'@'localhost';
ALTER USER 'root'@'localhost' IDENTIFIED BY '013626210!';
FLUSH PRIVILEGES;
 - Where you change current_username to the current username you are using

Lesson Learned Section

Hung

- In this course project, I learned how to leverage JSP to create query requests based on the situations. I also learned how to combine different relational databases to get the query results that I need to return the requested information by the user. Lastly, I learned how to use the Apache server to host JSP code and its CSS files.

Marco

- In this course project, I learned the importance of developing a good schema to keep sql queries fast and to a minimum. I also learned how to use a Jakartee 9 project to link dependencies needed for certain functions of our project in order to convert Gson to Json. Lastly, I understood the importance of 3 tier architecture to be able to keep a database secure.