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CS401

Software Engineering - Final Project Roadmap

Idea

- This project will be an online service which rents out physical copies of video games to customers for a cheap weekly fee across the United States.
- We'll allow customers to sign onto a premium membership which will allow for great perks such as a discounted weekly fee and an increased rental limit.
- Customers can pre-order a game with release day delivery for an extra charge.
- We'll host our inventory on a user-friendly website. We won't have every game available--but we will have the popular ones with enough copies to meet demand.
- We'll maintain a database of customers and inventory on our servers at our office in California.
- There will be two warehouses, one in California, and one in New York to maintain our inventory.
- Future Plans:
    - Digital rentals
    - Mobile App
    - Social Networking [forums, chat, games currently renting or playing]
    - More Warehouses

Details

Business Plan:
- **Fee:** $2/week per game; if you like it, you can buy it for 10% off retail price AFTER renting. Fees begin when the product is shipped out. Fees last until the return shipping label is processed. If not returned, fees will be charged until the game hits retail price, then the customer keeps the game.
- **Limit:** 2 games per customer MAX at a time
- **Premium membership:** $10 a month
    - **Premium Perks:** $1.50/week fee per game; 4 game max at a time per customer
- **Release Day Guarantee Pre-order:** Regular weekly fee + $3 charge

Logistics(Distributed Systems):
- 2 warehouses to hold inventory across the United States. One in California, one in New York
    - If there is stock available at the closest warehouse to the customer's address; ship from that location.
    - Otherwise, send stock from any location.
- Our office in California will maintain our server for both client relations, web management, and database management.

Website:
- Clean, friendly, charming UI that gets you in the mood to game.
- The first thing you should see is a brief sales pitch of our pricing & business model so customers can easily understand the perks
- Links to categories for popular video game systems and the games we have available to rent & pre-order
    - Xbox One, PS4, Nintendo Switch, Nintendo 3DS
    - [Later phase: Digital -> for all systems + PC]

Coding

Object-Oriented Design:
- Customer Object (note: add to this as needed for all coding topics)
    - Name / Address / Premium member? / Games Currently Renting [to keep track of limit]
- Video Game Object
    - Name / System / Weekly Fee / Weekly Fee for Premium Member / Discounted Purchase Price [to keep the game] /Pre-Order Fee [if it is a pre-order]
- Payment
- Warehouse
    - Create different instance for additional warehouses

Website:
- Home page -> brief description of what we offer -> current hot games
- Categories for video games by system
- Premium Membership Sign-up

Database:
- Video Game Inventory
- Customers
- Warehouse #1
- Warehouse #2

Client vs Server side
- Client - Customer information for updating info
- Server -> keeps information on customers [massive database of customers]
- Server -> video game storage / inventory
- Server -> Warehouse 1 / Warehouse 2

Roadmap

Phase 1:
- Instantiate Objects to hold inventory + customers & simulated data for testing
- Ready By: 2/18/20 -- **pushed back; Ready By 4/7/20**

Phase 2:
- Instantiate database with simulated data; simulate warehouse stock
- Ready By: 4/14/20

Phase 3:
- Have at least a basic website operational for browsing inventory, making purchases, signing up for Premium
- Ready By: 4/21/20

Phase 4:
- Begin networking between office, warehouse, and clients. Make sure this is operational with heavy testing.
- Ready By: 4/28/20

Phase 5 [Final Phase for v1]:
- Go live with rentals, shipping, and premium membership. Make sure that warehouse / website / database is fully operational. Make sure to resolve any errors that crop up.
- Ready By: 5/8/20

Phase 6 [Evolution]:
- Release DIGITAL RENTALS with a new business plan for rental fees.
- Ready to develop after V1 is complete

Phase 7:
- Allow for SOCIAL NETWORKING between customers -> forum/chat/etc
- Ready to develop after V1 is complete

Roles

Melinda - **Database** / -> all-around code management

Sitara - **Classes / Objects** (making sure all the object content is correct)

Mazie Xylyn - **Front End / GUI / UI work / simulated objects** (video game names, details, pricing, etc) / general code editing

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Github Repo:
https://github.com/maziexylyn/CS401_VideoGameRentals