Tu Lam

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Homework #1

1. *Methodologies*

i) *Describe your project in a few sentences.*

Answer: My project is to create a game with 50 levels where users would have to do an objective to do a shooting range where they shoot down cans to move onto the next stage. The goal varies at different stage and if you do not make it to the goal, you will not be able to proceed to the next level.

ii) *Describe how you can do said project with methodology 1. Describe how you can do the project with methodology 2.*

Answer: To follow this project, the first methodology can follow the Waterfall process, basically plan out the game in advance and follow step-by-step at each stage and get the approval of one stage before moving onto the next stage until the release of the game. The second methodology I could follow is the Agile process where the game is made on the spot with the require needed from consumers and increment new element and continue with the development after the game has been release.

iii) *Explain why one methodology is better than the other, for your project.*

Answer: When looking at the two different methodologies, the one that is better than the other for my project is the Waterfall process. This process is better as I know what I want in advance and how each level goal is and there is a limit of levels in the game and I will not add more in the future. If I want to add feature to get more levels by buying DLC, then doing Agile would suite better in the project, but I want nothing to change in the game, so Waterfall is the best fit.

2. *Augmented reality (AR)table-tennis game*

i)

Functional Requirements	Non-Functional Requirements
- The AR table-tennis would display the score if somebody won while playing. - The AR table-tennis would be able to detect the room around them and automatically place the virtual table-tennis in the area.	- Once somebody wear the AR headset, the AR would load up in 30 seconds of the time once putting on the headset. - The AR would run on any version of the AR that has it install.

ii)

System Requirements	Software Requirements
- The system of the AR requires at least 2 GB from the AR system to run. - The system requires at least a stable of 30Mbps internet connection to run it smoothly on the AR system.	- The require software is to be sure that the ball act like the real ping pong ball in the virtual system. - The software would be to increment score for player if the ball were not hit back or land somewhere out of the scope of the virtual system.

iii) *User stories (minimum of 3)*

Answer:

1. As a *customer*, I want *the ability to do special move when hitting the ball in the system*, so that *I can earn more points if do a special move*.

2. As a *customer*, I want *a virtual background that can be change in the AR system*, so that *I can have a different environment than my own room*.

3. As a *consumer*, I want *a way to save/load my game when I want*, so that *I do not lose my progress if I exit the system and come back in at some point*.

3. *EECS ideal logic system*

i) ***Scrum Master***

Answer: The role of the Scrum Master takes on the tasks of keeping all the sprint backlogs up to date. This means that after debriefing with the Product Owner about the requirements in the product backlog like the login function, preference for students/teachers, update the assignments, and assigning TAs, then our goal is to take the tasks and implement it one at a time. Meaning that, working alongside with the Development Team, implement the design of this ideal logic system while keeping the development Team following the scrum framework. This framework will come in the form of scrum planning, daily scrum, sprint review, and scrum retrospective.

Another goal while working on this logic system that as a Scrum Master, I would also need to make sure our team meet the goal of the sprint backlog and be able to release it.

ii) ***Product Owner***

Answer: As a product owner, I would take the collection of the user stories requirements or the product backlog and learn about it. Then I would organize the product backlog and rearrange the items to the class of high priority to low priority base on each user story in that product backlog. If there are any doubt, I would reach out to the customers or the people who needed this product to get clarify and understand the wants and needs in this product. This consists of understanding the login function, preference for students/teachers, update the assignments, and assigning TAs.

Lastly, after all the rearrangement and organization, I would inform the Scrum Master about the project given it concise and clear detail about it.

iii) ***Development Team***

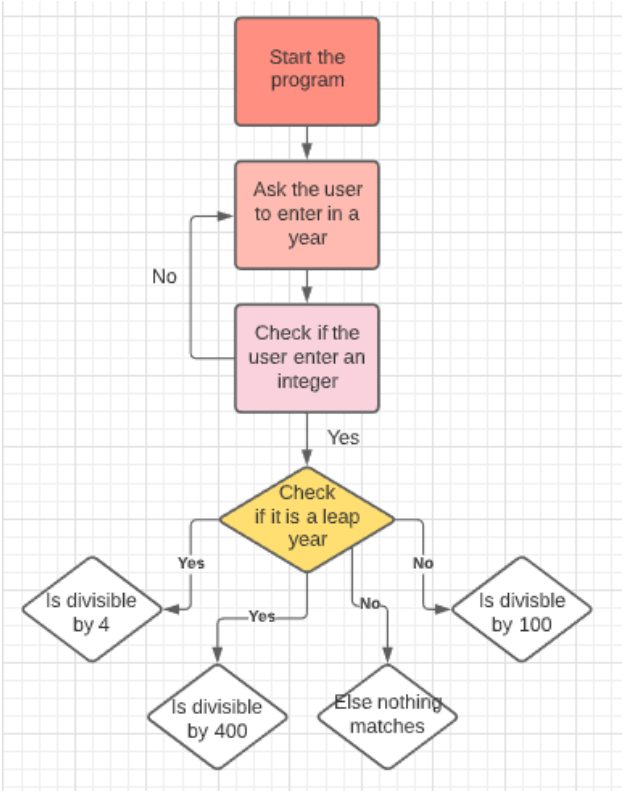
Answer: As for the Development Team, the team would be working with the Scrum Master to meet the goal that is needed in the sprint backlog when it was prioritized by the Product Owner. Once the goal has met, we would be able to release it in the future. With the way to implement the backlog, for example the login function, we could use code in HTML/CSS to design the login page and use database to identify with the login to match any of the account in the database. To make sure all these functionalities that are a requirement work, we would follow the scrum framework.

First, we would use Sprint Planning where layout the timeframe of development with the Product Owner. Then, we would use Daily Scrum to catch up and debrief the implementation that has been done and what need to work next. Next is the Sprint Review, where the product is release to the customer and demo it. After it would be Introspective by reviewing what has been done and how can we improve later if ask. If follow these framework key pints, the Development Team would be on track with implementing the desire product that the customer asks.

4. *Requirements ⇨ Documentation/Design ⇨ Code*

i) *Convert this requirement to a* ***design*** *- (visualize the logic required to solve this problem as a flow chart).*

Answer:



ii) *The following implementation is written in a .py file and will be attach to the PDF on a separate file.*