**SWE201c -** Solution PE Summer 2023

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1. **Requirement characteristics**

* Reliability:
* The requirements, especially those related to the virtual fitting room functionality, are unclear and challenging to comprehend.
* These requirements are still not sufficient to implement a complete application. The application must also include a clothing rental feature, which is not mentioned in the description.

-> ***The reliability of these requirements from MEDIUM.***

- Types and number of requirements

* Requirements mention both functional requirements and non-functional requirements.
* The quantity of functional requirements could exceed 50, given that there are five primary features, with each feature encompassing over 10 functional requirements. For instance, within the 'Virtual Fitting Room' feature, customers have the capability to upload photos, choose garments, mix and match clothing, and more.
* Frequency of requests may change

+ Requirements which were listed above may be changed in future to meet customer's demand, they are just beginning features of this application.

+ There will be more features in future to finish the project.

**-> Functional requirements may change regularly.**

- Determination of requirements at an early stage

+ Although there are 5 features at an early stage, they are NOT enough for a completed system.

+ In the process of developing, features can be added or deleted or adjusted.

**-> Define requirements not at early stage**

- *Development team*

+ Team size:

*In this circumstance, the project includes 9 members:*

*1 product owner - me*

*6 developers*

*2 QAs*

***-> The team has 9 members, a medium team that can handle a medium system.***

***-*** Level of understanding of user requirements by the developers:

* Team can be provided additional information and resources when needed, supporting the team when needed.

+ There is no information about the developers, but at the level of understanding nowadays, a developer can handle almost any difficult task due to the support of documents.

**-> Developers can understand what customers need easily.**

- User involvement in the project

- The organisation had contracted with a local company to provide additional resources when needed.”

- In the development process, the team will get additional resources. It is the customer's work to support and provide more information. So the progress of this project can be handled.

***-> User involves to this project highly***

Bổ sung 3 yếu tố phân tích

* Khách hàng (là những người mua app, những người đưa ra yêu cầu. Nếu người mua hàng đưa ra toàn bộ yêu cầu 1 lần duy nhất => waterfall, người mua hàng chấp nhận feedback, đưa ra thêm những điều kiện sau này => scrum).

Đề này không nói rõ khách hàng.   
Nếu ứng dụng này được 1 công ty tạo ra và cho những khách hàng chơi (công ty MiYuho tạo ra Genshin => khách hàng thì người chơi).

Nếu có khách hàng thuê code app và công ty code cho khách này => outsource. Code ứng dụng nhma cho khách hàng sử dụng. VD quán trà sữa order 1 phần mềm tính tiền từ công ty X.

Đề này thì khách hàng là người dùng app (công ty gì đấy tạo ra ứng dụng cho những khách hàng.)

**Customer**

**Demand: Ứng dụng tạo ra trong kỳ pandemic. Khách hàng cần ứng dụng để mua (trích từ màu xanh ra) => Đây là một ứng dụng khá quan trọng trong kì dịch bệnh (viết ra chỉ để cho thấy tầm ảnh hưởng, không có ý nghĩa cho việc pick scrum hay là watefall)**

**Fan Waterfal: Customer may not needs to change requirements since the pandemic can be controller in later stage.**

**Fan Scrum: Due to some reason, customer may need to change requirements, since the pandemic can process complexity, the visus can become strong, there maybe some more function need laters,...**

**Time Constrant (giới hạn)**

**Nếu ít thời gian => Waterfall: 2-4 tuần**

**Since the time for the projects is alloced 2-4 weeks, i prefer Waterfall. I divide the project to 5 phrases,**

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**Requirements: 2-3 days to handle this, i wil create survey to gather requirements from customer**

**Design Phase: 4-5 days, i will design the system and UI, i use .NET for backend, ReactJS for Frontend and draw the UI in figma.**

**Implemsne: 2 tuần for coding.**

**Testing: 1 tuần cho testing.**

**Deploy & Maintain: 2 ngày để kiểm tra tính ổn định .**

**Dài hơn => Scrum: > 2 tháng**

**I deivde the project into 6 sprints, each sprint take 2 weeks. Each sprint will handle a task**

* **Sprint 1 & Sprint 2 & Sprint 3 handle Virtual Fitting**
* **Spring 4 handle User Re**
* **…**

**Each sprints will handle all phase:**

**Reqireuemts (1 ngày) => Design (2 ngày) => Coding & Testing (1 tuần)=> get feedback from customer**

**Nếu muốn viết rõ định nghĩa các phase, thì có thể**

**I will the last 3 months to get feedbacks from customer to get feedbacks about their exprientenc.**

**Nguyện vọng từ lead - 1 sở thích, 1 phần là phù hợp:**

**I want to apply Scrum because I have exprient in Srum, Because all requirements, contexts I meet that is suitable from scrum, so that i decided to apply Scrum for this project.**

So, I decided to choose Scrum as my development methodology.

The Agile/Scrum methodology is deemed the most efficient way to implement the software development project based on the described features. At every developmental stage, Agile/Scrum emphasises adaptability, collaboration, and continuous customer feedback. This approach allows the development team to integrate user feedback into successive iterations of the product, enabling early product releases for user assessment. Prioritising customer needs ensures the final product will meet their requirements. In summary, the Agile/Scrum process is well-suited for this software development project and is anticipated to yield a high-quality end product.

1. I have opted for a blend of black box and whitebox testing, assigning whitebox testing to our developers and blackbox testing to our Quality Assurance (QA) team. Developers will handle Unit Testing and Integration Testing, guaranteeing the seamless functionality and absence of conflicts in the code. Meanwhile, for QA, I've chosen User Experience Testing to ensure a delightful user experience when interacting with the application.

**3.**

**Test Suite 1:** Upload an photo to system

* Test Case 1: Upload a cow image to the system.

Expected Result: System notifies that cannot determine the people in image.

* Test Case 2: Uploading an image of a boy to the system.

Expected Result: The system should correctly identify the character in the image as a boy and proceed to determine associated attributes such as height, weight, facial features, and more.

* Test Case 3: Uploading an image of a girl to the system.

Expected Result: The system should correctly identify the character in the image as a girl and proceed to determine associated attributes such as height, weight, facial features, and more.

**Test Suite 2:** Share a new cloth through Zalo

* Test Case 1: Sharing to a Zalo group chat.

Expected Result: The system should generate a new message containing a link to the clothing item.

* Test Case 2: Sharing to a Zalo private chat.

Expected Result: The system should generate a new message containing a link to the clothing item.

**Test Suite 3:** Add a new clothe

* Test Case 1: Add a new cloth with valid inputs.

Expected Result: The system should generate a cloth then save to the database.

* Test Case 2: Add a new cloth with invalid inputs.

Expected Result: System notifies error message.

**Test Suite 4:** Provide feedback

* Test Case 1: Add feedback with valid inputs.

Expected Result: The system should generate feedback then save to the database.

* Test Case 2: Add a new feedback with invalid inputs.

Expected Result: System notifies error message.

4. - The 4 *functional requirements* of system are:

* AR Clothing Try-On Functionality:
  + This feature enables users to virtually try on clothing items using Augmented Reality (AR) technology.
  + Users should have the ability to visualize how different clothing items appear on them through the AR experience.
* Zalo Sharing Capability:
  + This functionality allows users to share new fashion samples seamlessly through Zalo.
  + Users should be able to post and share updates on the latest fashion items directly within Zalo group chats or messages.
* Feedback Submission Feature:
  + The feedback submission feature permits users to provide feedback regarding inaccuracies in clothing sizes or other issues.
  + Users should have the capability to submit constructive feedback about the fit or any discrepancies they encounter with specific clothing items.

Create New Cloth:

* This functionality empowers users to design and add new clothing items to the system.
* Users should be provided with intuitive tools for creating and customizing the appearance of new clothing items within the application.
* The system should support the addition of details such as color, pattern, size, and style during the cloth creation process.
* Upon completion, users should be able to save and integrate their newly designed clothing items into the application's inventory.

- The 2 *recommended* *non-functional requirements* of system are:

+ Availability: The system should be accessible 99.99% of the time.

+ Response Time: System should response lower than 3-second timeframe to user **actions.**

**5.**

As a customer, I want to try on clothes virtually using AR technologies so that I can assess how different clothing combinations look on me.

As a seller, I want to share new clothing items in Zalo Group Chat so that customers can easily view and stay updated on the latest fashion offerings.

**6,**

| Activities | Try on clothes virtually ( | | | User reviews and ratings | | Styling …. | Social Sharing | Notification and alert |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tasks | Send an photo | Select virtual clothes | Manage wishlist clothes | Review | Ratings | Pick a image and request suggestion | Share on Social Medias | View  notifications |
| MVP | Upload a photo from local device | Select virtual clothes from the full list (lựa chọn áp quàn từ danh sách đầy đủ) (chế) | Add clothes to wishlist manually | Review by leaving feedback | Rating by leavings star (chế) | Pick a image from uploaded images and request suggestion from system | Share Facebook | View notifications manually |
|  | Capture a image by live camera |  | Update wishlist |  | Rating by leavings comments |  | Share Zalo |  |
|  |  |  | Add clothes |  |  |  |  |  |
|  |  |  | Delete clothes |  |  |  |  |  |
| Release #1 |  | Select virtual clothes from suggestion |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |

**7.**

* Issue: Image Recognition Failure
  + Probability: Low
  + Impact: Low
  + Explanation: The system may occasionally fail to recognize uploaded images. This is less likely to occur due to the current effectiveness of the recognition technology. If it happens, users can simply upload a new image, and the occurrence is not a significant concern.
* Issue: Image Recognition Failure
  + Probability: High
  + Impact: Low
  + Explanation: There is a higher likelihood of the system failing to recognize images due to factors such as lighting conditions or angles during upload. However, the impact remains low as users can easily address this by uploading a new image.
* Issue: Incorrect Height and Weight Determination
  + Probability: High
  + Impact: High
  + Explanation: The system may inaccurately determine height and weight from images due to variations caused by different angles or lighting conditions. This has a high impact as it can result in ill-fitting clothing recommendations based on incorrect user measurements.
* Issue: Trying on Out-of-Stock Items
  + Probability: High
  + Impact: Low
  + Explanation: The system allows users to try on items that are out of stock. While there is a high probability of this occurring due to continuous order processing, the impact is low as users can easily select alternative available items.

| **Size guides and recommendation** | | **View 360** | **Phần 3 trong đề (high quality)** | | **Flexible Return to get money** | |  | **Add to card (làm đơn)** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Manage body information** | **View suggesst** | **View in 360** | **Change items attributes** | **Zoom** | **Return producto get money** | **Exchange** |  |  |
| **Provide body information (weight, high, …)** | **View suggest based on body** | **View the product in 360-radio views in a 3D environtment** | **Edit color (black/white/blue)** | **Zoom in** | **Retturn and receive money back** | **Return an item and get new differnent item** |  |  |
| **Update body info** | **View suggest based on customer input (trend gì, người ta mua gì nhiều, …)** |  | **Edit size (S/M/L/XL)** | **Zoom out** |  | **Return an item and get new item with different attributes (Size, …)** |  |  |
|  |  |  | **Edit fabric meterial (cotton/ polyme/ …)** |  |  |  |  |  |