**Scope and limits**

* **Out scope**
  + **Motion interactive interface:** The motion interactive interface helps users have a better experience, making it feel like they are interacting with real intelligence. however this requires not only programming knowledge but also advanced design skills. At the novice level, we have not yet implemented that in our project and have just stopped at the static interface.
  + **Audio spectrum:** since VA has the ability to communicate back to the user by voice, being able to display the audio spectrum or sound pulse will make the interface more intuitive. help users distinguish the sound that is the sound of the VA from other sounds being played through the sound system. however this requires advanced knowledge of interface design so we are not able to apply it yet and will improve in the future.
  + **Mobile devices UX/UI:** The convenience of VA lies in being able to run on multiple device platforms, especially when integrated into mobile devices. However, the group's knowledge limit is still limited to programming running on computer platforms. If it is possible to create an application interface that works on mobile devices, that could lead to a wider audience of users.
* **In scope**
  + **Text area:** In order to track the conversation history of the command, we have integrated the text area into the user interface. This makes it possible not only to better monitor VA, but also to support use in environments where quiet is required or where the sound system cannot be used.
  + **Function buttons:** Although it is very convenient to use commands or communicate with the shirt assistant by voice, in some cases, manual buttons are still necessary. We want the user to be able to issue commands to the virtual assistant by typing commands or pause the device so that it doesn't pick up unwanted sounds in certain environments or simply use the voice is not appropriate in some cases.
  + **Multi environment:** although not really perfect, but the user interface created in our project can still run on some popular operating systems such as MacOS, Windows or linux... This helps access to a wide range of users as well as more convenient support for users who work with many different computer operating system environments.
* Scope: When we were creating the interface for the assistant, we thought about the convenience of the user on two main platforms, smartphone and computer. Therefore, we built the assistant as an application to make it easy for users to approach. In addition, we have been looking for solutions to possibly run on other devices, such as television.
* Limits: we still have a lack of knowledge about using python language for designing the interface. Hence, we built it simply with basic codes like adding images and making texts. Furthermore, experience is necessary for building a beautiful interface with helpful features. Because we are newbies, we still need to learn more and do more projects to have more solutions and creative ways for us in the future. Of course, the most limited thing to us is time for doing the project. Due to the lack, we need more time to research information and build the interface better.