

Scenarios and scripts for our video prototypes

This script was written to describe eight different scenarios where a user will carry on with a certain interaction with a home appliance using a series of mechanisms that will provide a certain level of voice interaction with the smart appliance.

The eight scenarios for our video prototypes are:

1. Full automation based

- a. **Low Complexity Task:** For this task, the user will explain her / his needs, and based on that, the smart washing machine will decide the best option, and execute it for the user.
- b. **High Complexity Task:** Same as the low complexity task, but the complexity of the task will be higher than the previous one. In other words, the washing machine should perform more options to satisfy the users' needs.

2. Recommendation based

- a. **Low Complexity Task:** For this task, the users will explain her / his needs, and based on that, the smart washing machine will provide recommended options for the users to choose.
- b. **High Complexity Task:** Same as the low complexity task, but the complexity of the task will be higher than the previous one. In other words, the recommended washing options will be more complicated.

3. Instruction based

- a. **Low Complexity Task:** Here, the user will interact in a series of dialogues with the smart washing machine to achieve a certain washing cycle. All the dialogues will be guided by the appliance; the user will only provide confirmation on the action selection.
- b. **High Complexity Task:** Same as the low complexity task but the dialogue will have an extended set of options.

4. Command based

- a. **Low Complexity Task:** Here, the user will give a direct well-defined command to the washing machine to fulfill; the machine will only provide confirmation of the action.
- b. **High Complexity Task:** Here, the user will interact in a series of dialogues with the smart washing machine to set a specific washing cycle. All the interactions will be guided by the user; the machine will only provide confirmation on the actions.

Narrative Script

Full automation based

Low Complexity Task

[Narrator] Today is Saturday, a user (James) wants to do laundry for his family. Now he is approaching the washing machine.

[Machine] Welcome to the Smart Washer. I'm ready to help.

[User] I just have a regular laundry for this week. I just have a couple of jeans, and some shirts and shorts. That's it.

[Machine] The regular cycle is selected. The load and spin cycle will be set to medium, while the washing temperature is set to low. Do you confirm?

[User] Yes.

[Machine] Perfect. A notification will be sent to your phone when the laundry is done. Have a nice day.

High Complexity Task

[Narrator] Today is Saturday, a user (Rose) wants to do laundry for her family. Now she is approaching the washing machine.

[Machine] Welcome to the Smart Washer. I'm ready to help.

[User] I have a weekly laundry for my family. I found one wool sweater, and one of my blouses has a wine stain.

[Machine] I see. Are there any additional requirements for your clothes?

[User] Hmm, I also want to also remove all the wrinkles from my clothes.

[Machine] Alright, Stain wash cycle is selected. The load and spin cycle will be set to medium, while Washing Temperature is set to high. (A small pause) After washing, extra rinse and self-clean cycle will be additionally executed. Do you confirm?

[User] Yes

[Machine] Perfect. A notification will be sent to your phone when the laundry is done. Have a nice day.

Recommendation based

Low Complexity Task

[Narrator] Today is Saturday, a user (James) wants to do laundry for his family. Now he is approaching the washing machine.

[Machine] Welcome to the Smart Washer. I'm ready to help.

[User] I just have a regular laundry for this week. I just have a couple of jeans, and some shirts and shorts. That's it.

[Machine] I see. There are two possible options. The first option is using the regular cycle with medium load, medium spin and low temperature, and the second option is using the speed cycle with medium load, medium spin and hot temperature.

[User] Hmm, I think the first option is good.

[Machine] Good choice. The regular cycle is selected. The load and spin cycle will be set to medium, while the washing temperature is set to low. Do you confirm?

[User] Yes.

[Machine] Perfect. A notification will be sent to your phone when the laundry is done. Have a nice day.

High Complexity Task

[Narrator] (user approaches the washing machine, looks at clothes and put it inside the machine)

[Machine] Welcome to the Smart Washer. I'm ready to help.

[User] I have a weekly laundry for my family. I have one wool sweater, and there is a blouse with wine stains.

[Machine] I see. Are there any additional requirements for your clothes?

[User] Hmm, I also want to also remove all the wrinkles from my clothes.

[Machine] I see. There are two possible options. The first option is to pre-soak the clothes in advance, and use the delicate cycle with medium load, and medium spin, while the temperature is set to high. (A small pause)The second option is to use the stain wash cycle with medium load and medium spin while the temperature is set to high. With this second option, the extra-rinse cycle and the self-clean cycle will be additionally executed.

[User] Hmm, I think the second option is good.

[Machine] Good choice. Stain wash cycle is selected. The load and spin cycle will be set to medium, while Washing Temperature is set to high. After washing, extra rinse and self-clean cycle will be additionally executed. Do you confirm?

[User] Yes.

[Machine] Perfect. A notification will be sent to your phone when the laundry is done. Have a nice day.

High Complexity Task (Cut-in Scenario)

[Narrator] (user approaches the washing machine, looks at clothes and put it inside the machine)

[Machine] Welcome to the Smart Washer. I'm ready to help.

[User] I have a weekly laundry for my family. I have one wool sweater, and there is a blouse with wine stains.

[Machine] I see. Are there any additional requirements for your clothes?

[User] Hmm, I also want to also remove all the wrinkles from my clothes.

[Machine] I see. There are two possible options. The first option is to pre-soak the clothes in advance, and use the delicate cycle with medium load, and medium spin, while the temperature is set to high. (A small pause)

[User] Ah, just stop, I think the first option is good enough.

[Machine] Good choice. Pre-soaking in advance is selected. The load and spin cycle will be set to medium, while Washing Temperature is set to high. Do you confirm?

[User] Yes.

[Machine] Perfect. A notification will be sent to your phone when the laundry is done. Have a nice day.

Instruction based

Low Complexity Task

[Narrator] Today is Saturday, a user (James) wants to do laundry for his family. Now he is approaching the washing machine.

[Machine] Welcome to the Smart Washer. I'm ready to help.

[User] What should I do first?

[Machine] The first thing you need to do is to identify the colors of your clothes. Do you have whites, colors or both?

[User] Both (The user exams the clothes before answer - action instruction)

[Machine] Got it. I would suggest you wash the clothes by two loads. One for whites, One for colors. Now, please select the clothes you want to wash firstly.

[User] Ok. I will wash the colors first. (user put in all the color clothes - action instruction)

[Machine] Great. The next thing is to examine your clothes. Is there any cloth made of special texture? like wool, cashmere or leather? If you don't know, you can check the small wash care symbol attached to the cloth.

[User] No.

[Machine] Nice. Are there any clothes that need extra care? Like stain removal, color protection?

[User] No.

[Machine] Got it. Now, can you estimate the amount of the clothes?

[User] Normal, I think.

[Machine] Perfect. Do you have special requirements for your clothes? Like fast laundry, estimate odors, free wrinkle, or energy saving.

[User] No.

[Machine] Great. Based on your requirements, I have two suggestions. One is to set a speed cycle with medium load, medium spin, and hot temperature. High temperature works best for removing germs. The estimated washing time is 40 minutes.

[Machine] The second recommendation is to use a regular cycle with medium load, medium spin and low temperature. With low temperature, you can save energy. The estimated washing time is 50 minutes. Which one do you prefer?

[User] First one.

[Machine] Good choice. Speed cycle with medium load, medium spin and hot temperature are set. Do you confirm?

[User] Yes.

[Machine] Perfect. A notification will be sent to your phone when the laundry is done. Have a nice day.

High Complexity Task

[Narrator] Today is Saturday, a user (Rose) wants to do laundry for her family. Now she is approaching the washing machine.

[Machine] Welcome to the Smart Washer. I'm ready to help.

[User] What should I do first?

[Machine] The first thing you need to do is to identify the colors of your clothes. Do you have whites, colors or both?

[User] Both (The user exams the clothes before answer - action instruction)

[Machine] Got it. I would suggest you wash the clothes by two loads. One for whites, One for colors. Now, please select the clothes you want to wash firstly.

[User] Ok. I will wash the colors first. (user put in all the color clothes - action instruction)

[Machine] Great. The next thing is to examine your clothes. Is there any cloth made of special texture? like wool, cashmere or leather? If you don't know, you can check the small wash care symbol attached to the cloth.

[User] Yes. One of my sweaters is made of wool.

[Machine] Nice. Are there any clothes that need extra care? Like stain removal, color protection?

[User] Uh... Yeah. One of my blouses has some stains on it.

[Machine] Got it. Now, can you estimate the amount of the clothes?

[User] Normal, I think.

[Machine] Perfect. Do you have special requirements for your clothes? Like fast laundry, estimate odors, free wrinkle, or energy saving.

[User] Free wrinkle.

[Machine] Great. Based on your requirements, I have two suggestions. One is to set stain wash with the medium load, high temperature, and medium spin. Moreover, extra rinse is needed after the washing. stain wash and extra rinse will get the stains off properly. The estimated washing time is 80 minutes.

[Machine] The second recommendation is to use the pre-soak in advance and set a delicate cycle with the medium load, high temperature, and medium spin. The pre-soak and high temperature can get the stains easier. The estimated washing time is 70 minutes. Which one do you prefer?

[User] First one.

[Machine] Good choice. Stain wash with the medium load, high temperature, medium spin and extra rinse is set. Free-wrinkle will be provided after the washing is done. Do you confirm?

[User] Yes.

[Machine] Excellent. Since stain wash is required. Self-clean is recommended after the laundry is done. This function can clean the interior of the washer. Moreover, it can prevent, and estimate odors. Do you confirm it?

[User] Yes.

[Machine] Perfect. A notification will be sent to your phone when the laundry is done. After you pick out the clothes, the self-cleaning function will be activated. Have a nice day.

Command based

Low Complexity Task

[Narrator] Today is Saturday, a user (James) wants to do laundry for his family. Now he is approaching the washing machine. After he exams all the clothes. He pushes the start button.

[Machine] Welcome to the Smart Washer. I'm ready to help.

[User] Set the regular cycle.

[Machine] Ok. The regular cycle is set. Is there anything else?

[User] No.

[Machine] Great. The estimated washing time is 50 minutes. Do you confirm?

[User] Yes.

[Machine] Perfect. A notification will be sent to your phone when the laundry is done. Have a nice day.

High Complexity Task

[Narrator] Today is Saturday, a user (Rose) wants to do laundry for her family. Now she is approaching the washing machine. After she exams all the clothes, she pushes the start button. (While she is examining the clothes, she could murmur about there are some stains on her clothes - action instruction for participants to understand)

[Machine] Welcome to the Smart Washer. I'm ready to help.

[User] Set stain wash cycle with the medium load, high temperature, and medium spin.

[Machine] Ok. The stain wash cycle is set. Is there anything else?

[User] Yeah. Set extra rinse after the washing. And start Self-clean after the clothes are taken out.

[Machine] Got it. Extra rinse and self-clean are set. Do you confirm?

[User] Yes.

[Machine] Perfect. A notification will be sent to your phone when the laundry is done. Have a nice day.