**SMARTPHONE-ISSUES-QUICK-FIX**

The application developed is a SMARTPHONE-ISSUES-QUICK-FIX. It includes knowledge about the problems faced by smart- phone users. It’s an application with a graphical interface. It’s meant to guide smart-phone users through the process of diagnosing smart-phone problems they face in day-to-day life and suggest a solution.

It is multithreaded application and uses Jess’s reflection capabilities to build a Swing-based graphical interface directly from a Jess script Console.

Gathering the knowledge is done by interviewing a smart phone user to answer some of the most common problems they face daily while using their smart phones.

WORKING RULE:

The application uses backward chaining which works by creating special trigger facts based on partially matched rules. To make backward chaining work, you first have to turn it on with the do-backward chaining function. The rules are then written to match the trigger facts. The ask module asks questions based on the MAIN::ask facts written, so that your backward-chaining rule (called supply-answers in trigger module) can be triggered based on the rules.

KNOWLEDGEBASE:

Templates Used:

Question: It defines the slots required to

a)store the question itself b)type of question c) store the answer to the question in multiple formats: text(yes/no) or Number d)identifier to identify the question when used in defining rules

Answer:

a)identifier to identify the answer b) text field to pass the answer when application is running

Modules Defined:

Trigger:

It is a module to supply answers to the questions in MAIN Module.

Ask:

It is a module defined to accept the questions from MAIN Module with the identifier and GUI components are added to the JFrame.

RULES:

In Main Module:

Here the reasons of rule triggering is mentioned:

The solution when a particular rule is fired is included in .clp file in rule definition as a part of recommend-action “ String”

(I included some factors to determine if the phone works properly and to identify few problems. One can include few more factors in the rule definition by including answer fact)

smartphone-os : It is used to identify the OS used in the smart- phone of the user. It is set to the OS when the rule is defined itself.

not-plugged-in: This rule is fired when there is no display and smart-phone needs to be plugged into the socket for charging.

battery-drained: This rule is fire when there is no display and the battery is not working.

sudden-display-loss :This rule is fired when there is display, but when the display blurs frequently.

tiny-motherboard :This rule is fired when there is display, but when the display blurs more than 3 times within a hour.

no-restart: This rule is fired when there is display blur and doesn’t restart immediately when button is pressed.

switch-on: This rule is fired when there are no problems with smart phone is working properly.

available-storage: This rule is fired when the storage is full.

faulty-storage: This rule is fired when the storage is not full but when the smart phone gets slow due to some faulty apps.

faulty-power-button :This rule is fired when the power button doesn’t work properly and phone doesn’t restart immediately.

broken-display :This rule is fired when the display blurs because the display glass is broken.

speaker-problem :This rule is fired when there is some speaker problem and there is no audio heard.

headphone-problem: This rule is fired when there is no speaker problem but audio is not heard in the headphone itself.

network-problem: This rule is fired when there is problem with network connectivity.

camera-problem: This rule is fired when the phone switches off when camera is opened.

shortcut-menu-problem : This rule is fired when the iphone shortcut screens don’t appear.

software-update-problem : This rule is fired when there is display, but the phone becomes slow because recent software is not yet installed.

In Trigger Module:

supply-answers: This rule is fired when the answer is supplied from the MAIN module’s answer to the ask module.

In ask Module:

ask-question-by-id:. This rule is fired to decide which question is answered from Main :facts and waits for activations from the Rete Engine.

collect-user-input: This rule is fired when a question is asked from the facts of the Main Module and assert an answer to that question into the identifier and return the answer to decide which rule is to be fired from Main Module.

**TEST CASES:**

**All the commands in clp file have to be executed fro jess console one after the other.**

Test Case (i)

Select the os of smartphone …

ios

Does the smartphone begin to restart immediately?

Yes

Does the smartphone show any display?

Yes

Does the smartphone display shortcut-menu drop down(especially in iphone for the drop down/drag up menu) ?

No

The application displays the following suggestion on jess Console : I suggest you consider switching-off your smart phone and restarting it.

Test Case (ii)

Select the os of smartphone …

ios

Does the smartphone begin to restart immediately?

No

Does the smartphone power-button work?

Yes

Does the smartphone show any display?

Yes

Does the smartphone display shortcut-menu drop down(especially in iphone for the drop down/drag up menu) ?

No

The application displays the following suggestion on jess Console : I suggest you consider switching-off your smart phone and restarting it.

Test Case (iii)

Select the os of smartphone …

ios

Does the smartphone begin to restart immediately?

No

Does the smartphone power-button work?

No

The application displays the following suggestion on jess Console : I suggest replace power-button and it starts working

Test Case (iv)

Select the os of smartphone …

ios

Does the smartphone begin to restart immediately?

Yes

Does the smartphone show any display?

No

Is the smartphone plugged in?

Yes

The application displays the following suggestion on jess Console : I suggest repair or replace battery.

**Note:** By default the JFrame displays: Close window and exit application after the suggestion is made on jess Console.

The following jess commands are run after every suggestion made.

(reset)

(run-until-halt)