TDT4137 - Exercise 2

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**a) Typical “unit-tasks” and a top level NGOMSL model**

**PASS 1:**

Method to accomplish the goal: *call*

Step 1. Get next unit task

Step 2. Decide: If no more unit tasks, then return goal accomplished

Step 3. Accomplish goal: move to unit task location

Step 4. Accomplish goal: perform unit task

Step 5: Goto 1

Selection rule set for goal: *perform unit task*

If task is call using favorite-method tab, then

accomplish goal: call with favorite

If task is call using keypad-method tab, then

accomplish goal: call with keypad

If task is call using last called-method tab, then

accomplish goal: call with last-called

If task is call using contacts-method tab, then

accomplish goal: call with contacts

…etc…

Method to accomplish the goal: *move to unit task location*

Step 1: Get location of unit task from screen

Step 2: Decide: If unit task location on screen, then return with goal

accomplished

Step 3: Accomplish goal: select tab

Step 4: Goto 2

**b) Model the goal “call”, which calls a person**

Text in italic and bold are changed steps from previous passes

**PASS 2:**

***Method to accomplish the goal: select tab***

***Step 1: Locate “tab”***

***Step 2: Move finger to tab***

***Step 3: Press tab***

***Step 4: Verify feedback***

***Step 5: Move finger away from tab***

***Step 6: Return with goal accomplished***

***Method to accomplish the goal: call with favorite***

***Step 1: Locate person in list***

***Step 2: Move finger to list index***

***Step 3: Press person on list index***

***Step 4: Verify feedback***

***Step 5: Move finger away from list index***

***Step 6: Return with goal accomplished***

***Method to accomplish the goal: call with keypad***

***Step 1: Accomplish goal: enter phone number***

***Step 2: Locate call button***

***Step 3: Press call button***

***Step 4: Verify feedback***

***Step 5: Move finger away from call button***

***Step 6: Return with goal accomplished***

Stopping further expansion of “select tab”, since I in later subtasks of this exercise assume that the user is in the correct tab.

**PASS 3:**

***Method to accomplish the goal: enter phone number***

***Step 1: Get next digit***

***Step 2: Decide: If all digits entered, then return with goal accomplished***

***Step 3: Accomplish goal: enter digit***

***Step 4: Goto 2***

Method to accomplish the goal: *call with favorite* – Second draft

***Step 1: Accomplish goal: push button person***

Step 2: Return with goal accomplished

Method to accomplish the goal: *call with keypad* – Second draft

***Step 1: Accomplish goal: enter phone number***

***Step 2: Accomplish goal: push button call***

Step 3: Return with goal accomplished

***Method for goal: push button person***

***Step 1: Locate person button***

***Step 2: Move finger to person button***

***Step 3: Press person button***

***Step 4: Verify feedback***

***Step 5: Move finger away from person button***

***Step 6: Return with goal accomplished***

***Method for goal: push button call***

***Step 1: Locate call button***

***Step 2: Move finger to call button***

***Step 3: Press call button***

***Step 4: Verify feedback***

***Step 5: Move finger away from call button***

***Step 6: Return with goal accomplished***

**PASS 4:**

***Method to accomplish the goal: enter digit***

***Step 1: Accomplish goal: push button digit***

***Step 2: Return with goal accomplished***

***Method for goal: push button digit***

***Step 1: Locate call button***

***Step 2: Move finger to call button***

***Step 3: Press call button***

***Step 4: Verify feedback***

***Step 5: Move finger away from call button***

***Step 6: Return with goal accomplished***

**MODIFICATIONS TO WM USAGE:**

Method to accomplish the goal: *call with favorite* – Third draft

***Step 1: Retain that the command is PERSON, and accomplish goal: issue a***

***command***

Step 2: Return with goal accomplished

Method to accomplish the goal: *call with keypad* – Third draft

***Step 1: Accomplish goal: enter phone number***

***Step 2: Retain that the command is CALL, and accomplish goal: issue a***

***command***

Step 3: Return with goal accomplished

***Method to accomplish the goal: enter digit***

***Step 1: Retain that the command is DIGIT, and accomplish goal: issue a***

***command***

***Step 2: Return with goal accomplished***

***Method for accomplish the goal: issue a command***

***Step 1: Recall command name, and locate it on screen***

***Step 2: Move finger to command***

***Step 3: Press command***

***Step 4: Verify feedback***

***Step 5: Move finger away from command***

***Step 6: Forget command and return with goal accomplished***

**c) Compute execution time for the two phoning alternatives:**

I assume that the user is viewing the tab in question, so the execution is without the top level method/selection rule:

**Call by favorite –** execution trace**:**

Method to accomplish the goal: call by favorite:

Step 1: Accomplish goal: issue a command (FAVORITE)

Method for accomplish the goal: issue a command

Step 1: Recall command name, and locate it on screen (CP)

Step 2: Move finger to command (H)

Step 3: Press command (B)

Step 4: Verify feedback (M)

Step 5: Move finger away from command (H)

Step 6: Forget command, and return with goal accomplished

Step 2: Return with goal accomplished

(10 statements \* 0.1) + CP + 2H + B + M = 1.0 + 3.3 = **4.3 seconds**

**Call by keypad –** execution trace**:**

I assume a Norwegian phone number of 8 digits

Method to accomplish the goal: call by keypad

Step 1: Accomplish goal: enter phone number:

Method for accomplish the goal: enter phone number

Step 1: Get next digit

Step 2: Decide: If all digits entered, then return with goal accomplished

Step 3: Accomplish goal: enter digit:

Method for accomplish the goal: enter digit

Step 1: Retain that the command is DIGIT, and accomplish goal: issue a

command

Method for accomplish the goal: issue a command

Step 1: Recall command name, and locate it on screen (CP)

Step 2: Move finger to command (H)

Step 3: Press command (B)

Step 4: Verify feedback (M)

Step 5: Move finger away from command (H)

Step 6: Forget command, and return with goal accomplished

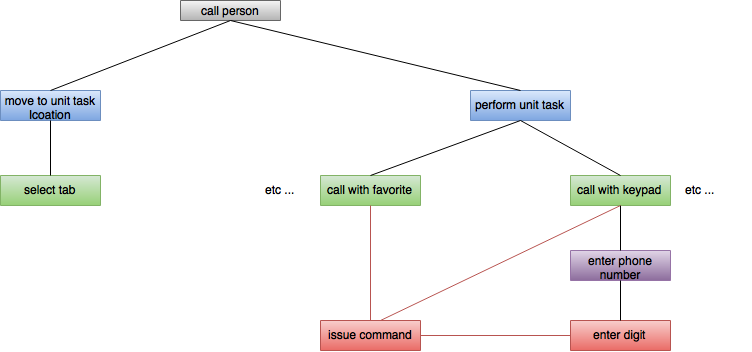
Step 2: Return with goal accomplished

Step 4: Goto 2

Step 2: Return with goal accomplished

(18 statements \* 0.1) + 8(CP + 2H + B + M) = 1.8 + 8(3.3) = **28.2 seconds**

**GOAL STRUCTURE TREE:**

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