

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

$(10 \text{ statements} * 0.1) + CP + 2H + B + M = 1.0 + 3.3 = \mathbf{4.3 \text{ seconds}}$

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

$(18 \text{ statements} * 0.1) + 8(CP + 2H + B + M) = 1.8 + 8(3.3) = \mathbf{28.2 \text{ seconds}}$

GOAL STRUCTURE TREE:

