Chapter 11

HCI Design Model: Models are used to guide the corrections of an interface

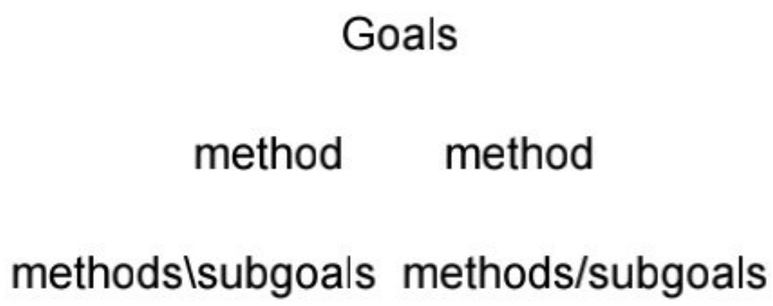
1. Goal and Task Hierarchies Model
   Goal: Status of system human wishes to achieve
   Task: Activities are steps required to achieve goals
   Activities: Physical interaction with device

Techniques for goal and task hierarchies

1. GMOS: Goals, Methods, Operations and Selections
   i. Goals: State want to achieve
   ii. Methods: Decomposition of a goal into sub-goal
   iii. Operations: Basic actions users perform
   iv. Selections: Means of choosing between completing methods
2. Cognitive Complex Theory
3. Hierarchical Task Analysis

Example: Sales Report

```
produce report
    gather data
        find book names
            do keywords search of books
                further sub-goals
            sift through names and abstracts by hand
                further sub-goals
        search sales database
            further sub-goals
    layout tables and histogram
        further sub-goals
    write descriptions
        further sub-goals
```



Linguistic Model

1. Understanding the user's behavior and cognitive difficulty based on analysis of language between user and system
2. Backus-Nour Form (BNF)
3. Task Action Grammar (TAG)

expression -> expression + term
-> expression - term
-> term

Terminal -> Final expression
Non-Terminal -> Intermediary expression

Draw a line using BNF Model

Draw line :: = select line + choose points + last point
Select line :: = pause mouse + click mouse
Choose point :: = choose one | choose one + choose point
Last point :: = pos mouse + DBL click mouse
Pos mouse :: = NULL | Move mouse + pos mouse

Draw Trapezium

Draw parallelogram :: = Draw Line + Turn 120 degrees right + Turn 60 degrees right
Draw line1 :: = select line + choose fixed points + last point
Draw line2 :: = select line + choose fixed points + last point
Select line :: = pause mouse + click mouse
Choose point :: = choose one | choose one + choose point
Last point :: = pos mouse + DBL click mouse
Pos mouse :: = NULL | Move mouse + pos mouse
Turn 60 degrees right :: = pos mouse + last point + draw line
Turn 120 degrees right :: = pos mouse + last point + draw line

Draw Square

Draw square :: = Draw Line + Turn 90 degrees right
Draw line :: = select line + choose fixed points + last point
Select line :: = pos mouse + click mouse
Choose point :: = choose one | choose one + choose point
Last point :: = pos mouse + DBL click mouse
Pos mouse :: = NULL | Move mouse + pos mouse
Turn 90 degrees right :: = pos mouse + last point + draw line

Draw Rectangle

Draw rectangle :: = Draw line1 + line2 + Turn 90 degrees right
Draw line1 :: = select line + choose fixed points + last point
Draw line2 :: = select line + choose another fixed points + last point
Select line :: = pause mouse + click mouse
Choose point :: = choose one | choose one + choose point
Last point :: = pos mouse + DBL click mouse
Pos mouse :: = NULL | Move mouse + pos mouse
Turn 90 degrees right :: = pos mouse + last point + draw line

Draw Parallelogram

Draw parallelogram :: = Draw Line + Turn 60 + 120 degrees right
Draw line :: = select line + choose fixed points + last point
Select line :: = pause mouse + click mouse
Choose point :: = choose one | choose one + choose point
Last point :: = pos mouse + DBL click mouse
Pos mouse :: = NULL | Move mouse + pos mouse
Turn 60 degrees right :: = pos mouse + last point + draw line
Turn 120 degrees right :: = pos mouse + last point + draw line