

## Chapter 10 Solver, Spreadsheet, Program and Menu Management

1. Describe the main features of each of the following knowledge management techniques:

a. **Solver Management**- an algorithm is procedural knowledge used to “solve” a problem

Primarily for procedural knowledge

Solvers are executed to provide problem solutions during decision making

Fixed and flexible solvers

-*Objects of Interest*

Model Base

model classes having models (problem statements)

solver classes having solvers which are executable instructions (for flexible solver approach)

control logic (for flexible solver approach)

dictionary- a mechanism for characterizing the structures listed above

Data sets- can be readily altered

might have multiple data sets for different models

Templates- types of presentation knowledge

-*Processing the Objects*

Fixed solver case (best known is IFPS-Interactive Financial Planning system)

models and data sets specified to conform to input requirements of specific solvers

templates specified to conform to what the PPS allows

execute solvers

Flexible solver case

-like fixed solver, plus

-ability to specify/alter solvers and perhaps control logic

b. **Spreadsheet Management**

Primarily for procedural knowledge and secondarily for descriptive knowledge

- *Objects of Interest*

spreadsheets, macros

- *Processing the Objects*

specification/alteration of spreadsheet

evaluation (like procedure/solver execution)

c. **Program Management**

Does not have spreadsheet limitations on handling procedural knowledge

presentation limitations

limited interactive procedure possibilities

limited to procedures with straightforward sequences of calculations

Type commands in a file like ordinary text instead of limiting them to a grid of cells

-*Objects of Interest*

programs composed of declarations (define arrays), commands (DO things),

comments (internal documentation)

include control commands that determine number of times and order in which

other commands are executed (IF...THEN)

*-Processing the Objects*

specification, alteration, analyzing program correctness, compilation, execution

d. **Menu Management**

Provides menu interface

Often used in conjunction with a programming language

prefabricated procedure that does menu processing

or, integrated facility in program management software

or, programs associated with options that tell menu manager how to

behave for each alternative. (i.e. programs are nested inside of menu management)

*-Objects of Interest*

Menus including their:

-positions

-options (having help and/or commands)

-explanations

-styles (color, type, layout, etc.)

Deal with presentation, linguistic, procedural knowledge

2. Explain the distinctions among these techniques in terms of the objectives used for knowledge representation and the methods used to process those objects.

SEE ANSWER TO QUESTION ONE ABOVE