

Chapter 11

Forms, Reports, Graphics, rule, and Message Management

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

a. **Forms management**

- Concerned with representation of presentation knowledge as a form and the processing of these forms
- Often integrated with a programming facility
- Objects of Interest*
 - Forms comprised of:
 - literal and/or nonliteral elements
 - nonliteral elements - inputs (variables) & outputs (expressions)
 - boxes
 - color blocks
 - Can be designed for presentation only and/or accepting user requests
- Processing the Objects*
 - Defining forms - Textual, interactive painting
 - Saving/loading forms
 - Controlling interaction via forms- clear a form from the screen and display the literal portion of a screen. cursor movement

b. **Report Management**

- For customized presentation of knowledge in terms of templates (comprised of forms)
- Not for ad hoc reporting
- ***Report Detail - Header/Footer Forms:report, page, group

c. **Graphics Management**

- Several kinds of graphics from drawings to graphs
- Can help decision makers quickly spot patterns, trend, proportions that exist in data
- depends on a data source
- Objects of Interest*
 - Data sources, Graphs
- Processing the Objects*
 - manipulating data sources (array like objects)
 - generating graphs from data sources
 - manipulating generated graphs

d. **Rule Management**

- Artificial intelligence approach to handling reasoning knowledge
- Used to build artificially intelligent DSSs called expert systems
- Objects of Interest*
 - rule sets comprised of rules, variable descriptions, initialization sequences, completion sequences
 - variables describing current state

-Processing the Objects

- rule set preparation/ maintenance
- conducting inference with a rule set (inference engine)
- explaining rationale underlying inferred advice
 - backward reasoning
 - forward reasoning

e. **Message Management**

- Concerned with representation and processing of knowledge in messages sent and received
- Helps decision maker create, send, receive, and use messages traversing communication networks
- Examples
 - E-mail
 - electronic bulletin boards
 - file transfer facilities
 - cooperative authoring
 - electronic brainstorming

-Objects of Interest

- messages (many variations)
- those sent and those received (classification of messages)
- usually descriptive knowledge, but could be other types as well

-Processing the Objects

- methods for message preparation
- methods for network access
- methods for message transferal
- methods for message use - (i.e. Automated Language translation system - Japanese to English)

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

SEE ANSWER TO ONE ABOVE

3. Recognize and assess the integration of multiple techniques in DSS development tools.

- New knowledge management abilities can result from integrating traditional techniques
- Integration is the basis for implementing a generalized problem processor*
 - GPPS is an intrinsic tool
 - serves as PPS for diverse DSSs
 - without regard to knowledge representation and processing requirements for any one of them
- All application-specific knowledge is stored in a KS that can be used by GPPS (nothing in the GPPS is application specific)
- However, no single representation method is superior to all others in all situations
- This implies a GPPS should have processing methods corresponding to diverse knowledge representation approaches

- Synergistic integration fits the requirements for a GPPS
 - multiple representations
 - processing independence and interdependence
- Human metaphor suggests such a GPPS resembles human cognitive skills