Problem Frames – exercise 1

Based upon the descriptions, plus your world knowledge (!) identify the problem types of the applications listed below :-

1. application to produce pictures from body scanner data
2. architectural drawing package
3. automatic train protection system that warns of collisions
4. catalogue shop sales and stock control system
5. CD ROM encyclopaedia
6. air traffic control system
7. computer aided design program
8. computer based "photo fit" system
9. engine management system
10. greenhouse environmental control system
11. "key to disk" system for entering credit card transactions
12. telephone exchange
13. lift control system
14. operating system for a computer
15. print job spooler (queues print jobs on a computer network)
16. program to convert MACwrite files into Word files
17. spreadsheet program
18. student records system
19. software to display email messages in pager format
20. video conferencing system
21. web search engine
22. yacht racing results program

Reminder, the possibilities are :-

Connection
Control
Information
Transformation
Workpiece

Draw problem frame diagrams for the following systems:-

Problem Frames exercise 2 - Problem domain description:
A system is required to control to operation of a turnstile. The mechanical apparatus has already been chosen and consists of a rotating barrier, an electrically controlled locking device and a coin slot. To enter the stadium, a visitor must first insert a valid coin into the coin slot and then push against the turnstile barrier for access into the stadium. When locked, the locking device prevents the barrier from turning.

Problem frames exercise 3- Problem domain description:
(derived from Jackson 2001)
A patient monitoring system is required for the intensive care unit in a hospital. Each patient is monitored by a set of sensors which measure factors such as pulse, temperature etc. The medical staff can specify the safe limits and the time period between each reading for each patient. The system is required to read the factors periodically (as specified for each patient) and send warnings to the nurses station if a factor falls outside the patients' safe range or if a sensor fails.