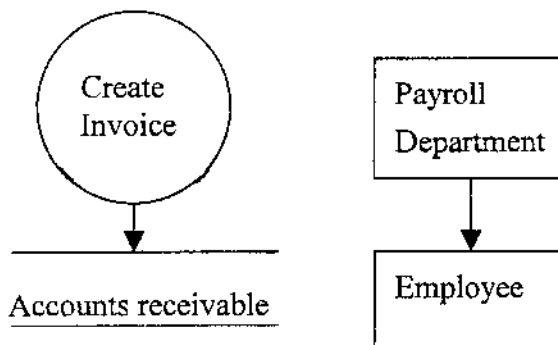A-1. For the following problems identify those that would be best suited
for an expert system and those that would use a decision support
system. Explain Why.
   a. Investing in the stock market. (5%)
   b. Monitoring and identifying causes of the bullwhip effect in supply
   chains. (5%)
   c. Choosing a marketing campaign.(5%)

A-2. Give a brief description of the application and limitations of the
following types of transmission medium:
   a. twisted pair lines (5%)
   b. microwaves   (5%)

A-3.Identify and explain violations of the rules for using DFD (Data Flow
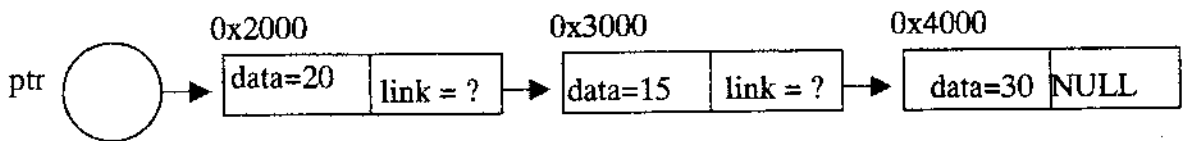Diagram) symbols in the following figures. (10%)

A-4.
   (a) What is information entropy? (5%)
   (b) How can database be used to derive decision trees? (5%)
   (c) What is the difference between fuzzy logic and decision tree? (5%)

B1. Intel recently announces a new CPU named "Centrino", what is its special function designed for "network"? (4%) IEEE has made a serious standard for the function. Please name at least one of the standards and discuss the specification and the speed it supports. (6%)
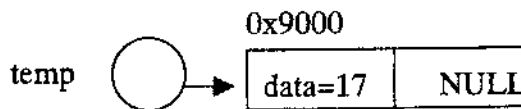
B2. Please use the structure to answer these two questions. (0x2000, 0x3000, ... shown in the diagram means the memory addresses of the node)

```
typedef struct list_node *list_pointer;
typedef struct list_node {
            int     data;
            list_pointer link;
            }
list_pointer ptr, temp;
```

(a) According to the following figure, what are the values of ptr->link->data and (*ptr).data? (6%)

(b) Please write a program to insert the node (*temp) into the nodes whose data values are 15 and 30?(10%)

B3. If we got a tree's preorder and in order as following: (9%)
preorder: 1,2,3,4,5,6,7,8,9
inorder: 2,3,1,5,4,7,8,6,9
Please draw this binary tree.

B4. The most popular broadband network used in Taiwan now is ADSL, compare to the traditional 56K dial-up modem, both use a twisted pair wiring, why ADSL can run much faster than 56K modem, please explain? (6%)

B5. In most O.O. languages, the access control and visibility have been defined in different access levels. Most widely used are "private", "public", and "protected". Please discuss the differences. (9%)