Option 22 Network Service

Develop an application that allows you to organize work on accounting of information transfer in the network: mail, file or hypertext. All servers in the network have a network address (IP address, for example, 194.67.66.175) and a network name (www.mephi.ru). Information about the provided service is stored in a special descriptor.

Mail descriptor - "receive or transmit" attribute; network address of sender or receiver; date and time of communication; amount of information (in MB).

File descriptor - sign "receiving or transmitting"; network address of sender or receiver; date and time of communication, duration of communication (in minutes), volume of information (in MB).

Network descriptor - sender's network address, date and time of communication, duration of communication (in minutes), volume of output and input traffic (in MB).

Information about the whole network service is summarized in a viewable table - "communication table" , each element of which contains the subscriber's network address and a pointer to the service descriptor.

The subscriber can be both a recipient and a sender of information.

Full information about the network service is stored in the server descriptor, which contains: the service's own network address and network name, the per minute charge rate, the per MB transmission charge rate and the "communication table" Ensure that the following operations are performed:

For the server descriptor:

get (return as a result) your own network address;

get the rate of communication minutes; get the rate of transmission of one MV;

include the item in the table by the subscriber's network address;

find an item in the table by subscriber's network address and service time (date and time of communication session);

show the contents of the table.

For any network service:

get (return as a result) the service type; get the type of communication ("receive" or "transmit");

receive the time (date and time of communication) of the service rendered; get the network address of the sender or receiver; get the communication time;

get the amount of information; calculate the cost of the service (the sum of the fee for the volume of information and the communication time).

For the application:

record information about the services rendered for the specified subscriber;

display information about the services rendered for the specified subscriber (total

volume and communication time for each type of service);

calculate the cost of all types of services rendered for the specified subscriber;

calculate the balance of received and sent information for all subscribers of the network using the iterator class.