

Software Services Over the Web

The Internet and the WorldWide Web have created a new opportunity for offering different kinds of computer services on a per-use basis. In particular, there are lots of software systems which are currently sold at high prices for individual licenses which may be usable on a per-use basis through the Web and the network. Your charge is to create a management system for selling services offered by specific software systems through the Internet. The functionality of the system is as follows:

A client logs on to a Web site and establishes an account with the services provider. The account information includes estimated storage requirements and processing requirements, a credit card for payment of the services used and a limit on total charges to be outstanding at any one time. The system has a set of services that are available at this Web site. There is a per-minute charge for the use of each service. Once a customer has an account set up, the customer (user) may select any service. The system verifies that the credit card is valid, gets an authorization number from the credit card company and sets up a session record for this use of this service by this user. The session includes a limit on the amount of time and charges which may be accumulated on this credit card authorization. The user is then connected to the desired service and the session is initiated. A user may have multiple simultaneous active sessions with the same or different software systems. The system monitors the charges which are being accumulated and if the user exceeds the preset limit, then the service is interrupted, the session is terminated and a charge is generated and sent to the credit card company. If, however, the user logs off before the limit is exceeded then the session is terminated, a transaction record is created and the credit card company is sent a charge slip. There are several servers used to execute the software and each service is associated with a specific server. There is a limit on the number of users for each service and each server to guarantee adequate levels of service. The system also keeps a log of all sessions, including customer information, so that it can use this information for marketing at a later date.

Your job is to implement the system for managing access to the services, interacting with the credit card companies, etc.