Wireless Network Security Lab Assignment

Networking

Q1) Create echo server and client application in Java?

Q2) Create multi-chat server and client application in Java?

Q3) Create FTP server and client application in Java using multi-threading?

Q4) Create a tic-tac-toe game in Java where client and server can play a game with each other?

Security

Q1) WAP in Java to ensure confidentiality between FTP client and server applications?

Q2) WAP in Java to ensure integrity between FTP client and server applications?

Q3) Write a single program that works in two modes, i.e., Client Mode and Server Mode. The client connects to the server for downloading a file. The server can handle multiple clients (use multi-threading)

a) When the program runs, it should ask whether it will work as a client or as a server.

b) The server listens to a fixed IP and port known to the client. When the client connects to the server, the client creates private and public key using RSA.

c) The client sends his public key to the server.

d) The server generates a shared AES key and sends it to the client after encrypting it using the client's public key.

e) Client requests a file from the server.

f) The server creates message digest by hashing the file requested by the client using MD5.

g) The server encrypts the file by using shared AES key.

h) The server sends the encrypted file and message digest to the client.

i) The client receives the encrypted file and message digest.

j) The client decrypts the encrypted file using the shared key.

k) The client performs the MD5 hash of the decrypted file and matches with the message digest.

Q4) Create a client-server program in Java showing the following operations

a) Server and client create a private and public key using RSA.

b) The server sends his public key to the client, and the client sends his public key to the server.

c) The client generates AES shared key and sends this key to the server after encrypting with the server's public key.

d) The server receives the shared key and decrypts it using its private key.

e) The client creates a message digest by hashing data using MD5 and encrypt this hash using his private key.

f) The client encrypts data using AES shared key.

g) The client sends data and message digest to the server.

h) The server receives data and message digest.

i) The server decrypts data using the shared key.

j) The server decrypts message digest using his private key.

k) The server performs the MD5 hash of data and matches with the decrypted message digest.

Q5) WAP in Java to create multi-chat server and client application with AAA authentication?