



## **UE17CS301: Computer Networks**

### ***LAN Poker***

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#### **Problem statement:**

Socket programs are used to communicate between various processes usually running on different systems. Implement a simple multiplayer game using the concept of socket programming.

#### **Topology:**

**Star topology** - All nodes (clients) are individually connected to a central point (server).

#### **Modules Developed:**

**Tkinter** - Python GUI tool

**PIL (Python Imaging Library)** - adds support for opening, manipulating, and saving many different image file formats

**String** - allows us to manipulate strings and implement our application protocol.

**Socket** - way of connecting two nodes on a network to communicate with each other.

**time** - Python's time module provides various time-related functions preventing the program from running too fast and ruining User Experience.

**random** - implements functions for randomizing elements of a list allowing us to 'shuffle' the deck of cards.

**itertools** - a collection of tools for handling iterators

**copy** - used to create deepcopies of variables so that one can modify one copy without affecting the others.

#### **Networks Concepts used:**

- **Socket programming**

A socket is an internal endpoint for sending or receiving data within a network. It facilitates communication between processes running on different machines. Socket programming is a way of connecting nodes on a network to communicate with each other. Sockets form the backbone of any web application.

- **Application Layer Protocol Design**

It is an abstraction layer that specifies the shared communications protocols and interface methods used by hosts in a communications network. Any web application needs to use a protocol for its messages to be deciphered by both parties. In this case, we have designed a simple comma-separated protocol design.

*New Concepts learnt:*

**Tkinter** - Python binding to the Tk GUI toolkit. It is the standard Python interface to the Tk GUI toolkit, and is Python's de-facto standard GUI. For our project, we've used tkinter to design our Poker table's UI, embedded with cards for each player while abiding by the rules of poker and not revealing one's hand to the other players.

**Game Programming** - We were able to establish the essential game dynamics of Poker using Tkinter and socket programming. Saved pictures of cards are imported and are randomly distributed to the players. We keep in mind that only the client can see his own cards and not the other clients, while the server serves as the dealer who distributed the cards and keeps track of the money being dealt with. Each round follows a set number of turns following which the table has to be reset for the next round.

*Sample Input and Output:*



**Flop**

Kevin  
90

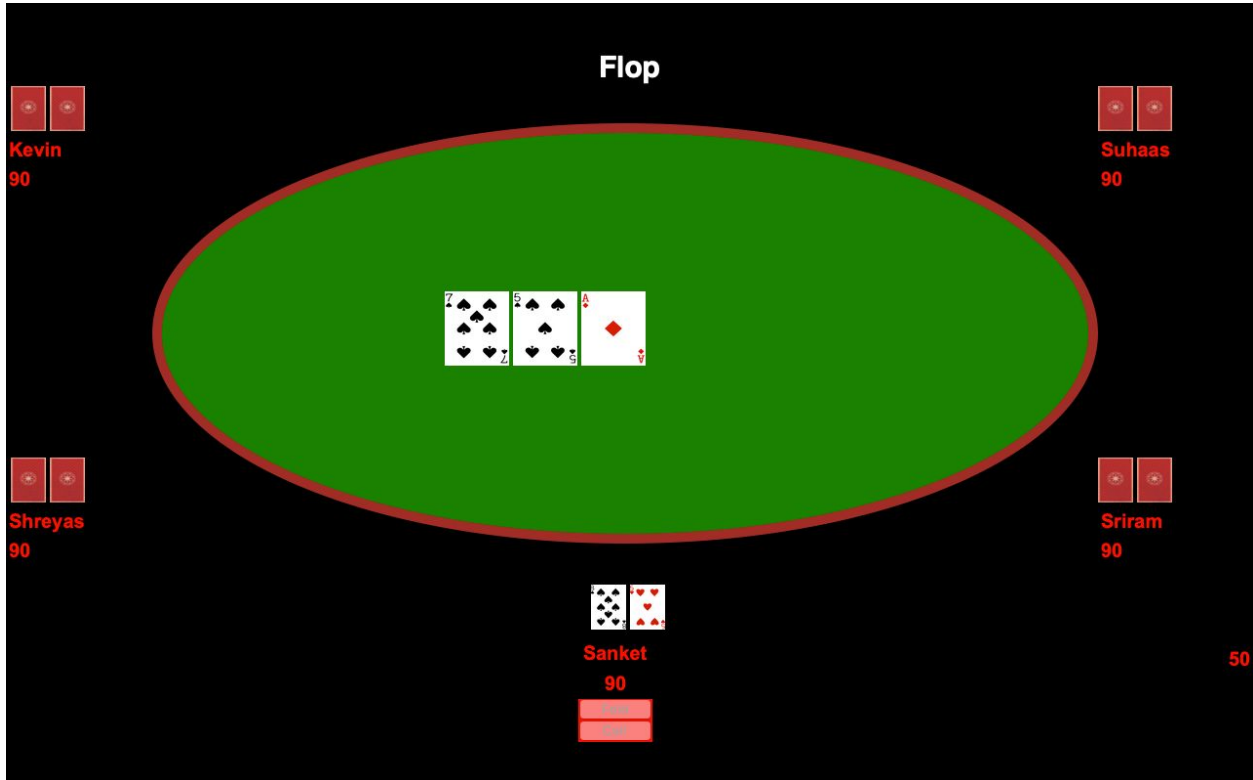
Suhaas  
90

Shreyas  
90

Sriram  
90

Sanket  
90

50



**River**

Sriram  
0

Suhaas  
0

Shreyas  
60

Kevin  
90

Sanket  
210

140



