Hand Cricket Game Using Server Client Communication

Kirtan uchil(RA2011003010484

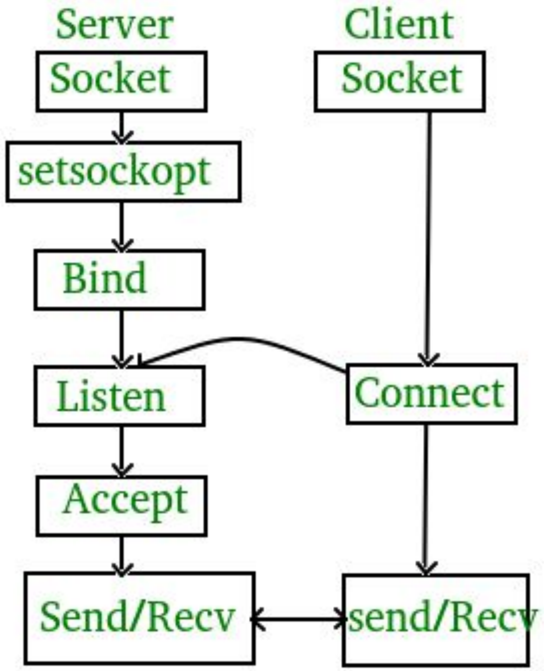
SHIVAM BAWARIA(RA2011003010495)

DARSHITA TATED(RA2011003010500)

ARPIT AGGARWAL (RA2011003010515)

Abstract

- Socket programming is a way of connecting two nodes on a network to communicate with each other.
- One socket(node) listens on a particular port at an IP, while the other socket reaches out to the other to form a connection.
- The server forms the listener socket while the client reaches out to the server.
  They are the real backbones behind web browsing.
- In simpler terms, there is a server and a client.
- Here there are two parameters.
- The first parameter is **AF_INET** and the second one is **SOCK_STREAM**. AF_INET refers to the address-family ipv4.
- The SOCK_STREAM means connection-oriented TCP protocol.



Project Analysis

The topic allocated to us for the socket Programming project is “Hand Cricket”.

Here, the client establishes a connection with the server, this implies that the TCP protocol

Is being used. The Server Should allocate a new thread for every new incoming Client, to accomplish this feature we took care of concurrent threads which is when the number of connections is made with the server, that time each thread doesn’t interfere with one another. Therefore we synchronized the thread.

Design And Implementation

- When we are running client1.py then using tkinter making window prompt.
- Same as in client2.py file.
- After Design window prompt we are implement players and select who’s doing bowling & bating.
- Both players are playing game.
- At the end we find out who win or lose match

Requirements And Tools Used

- Tkinter
- Socket
- Subprocess
- Python Libraries

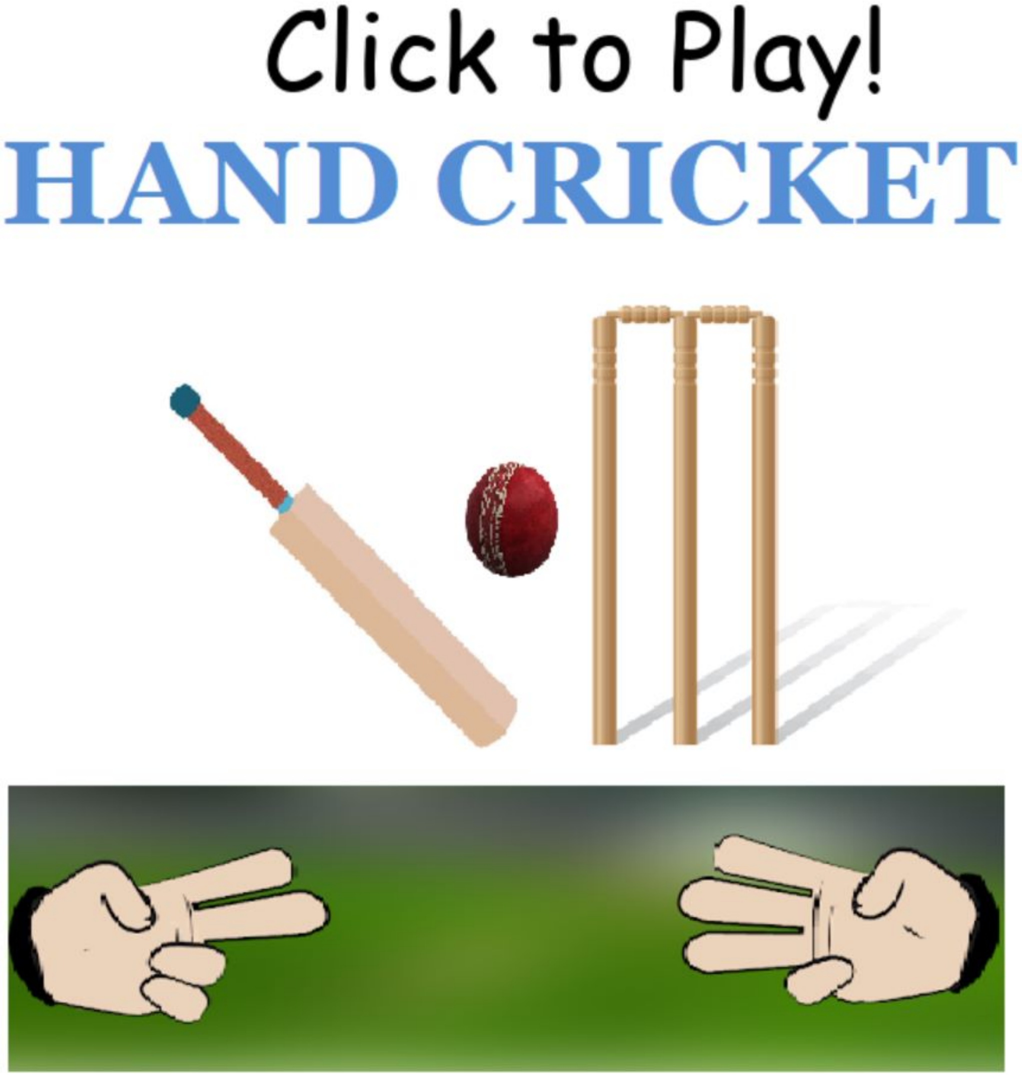
- Programming: Python
- Connection: Socket Programming
- Protocol: TCP
- User Interface: python Tkinter
- Data Storage: Using CSV files
- Data Updates: python-pandas
- Os calls: Python-subprocess

Workflow Description

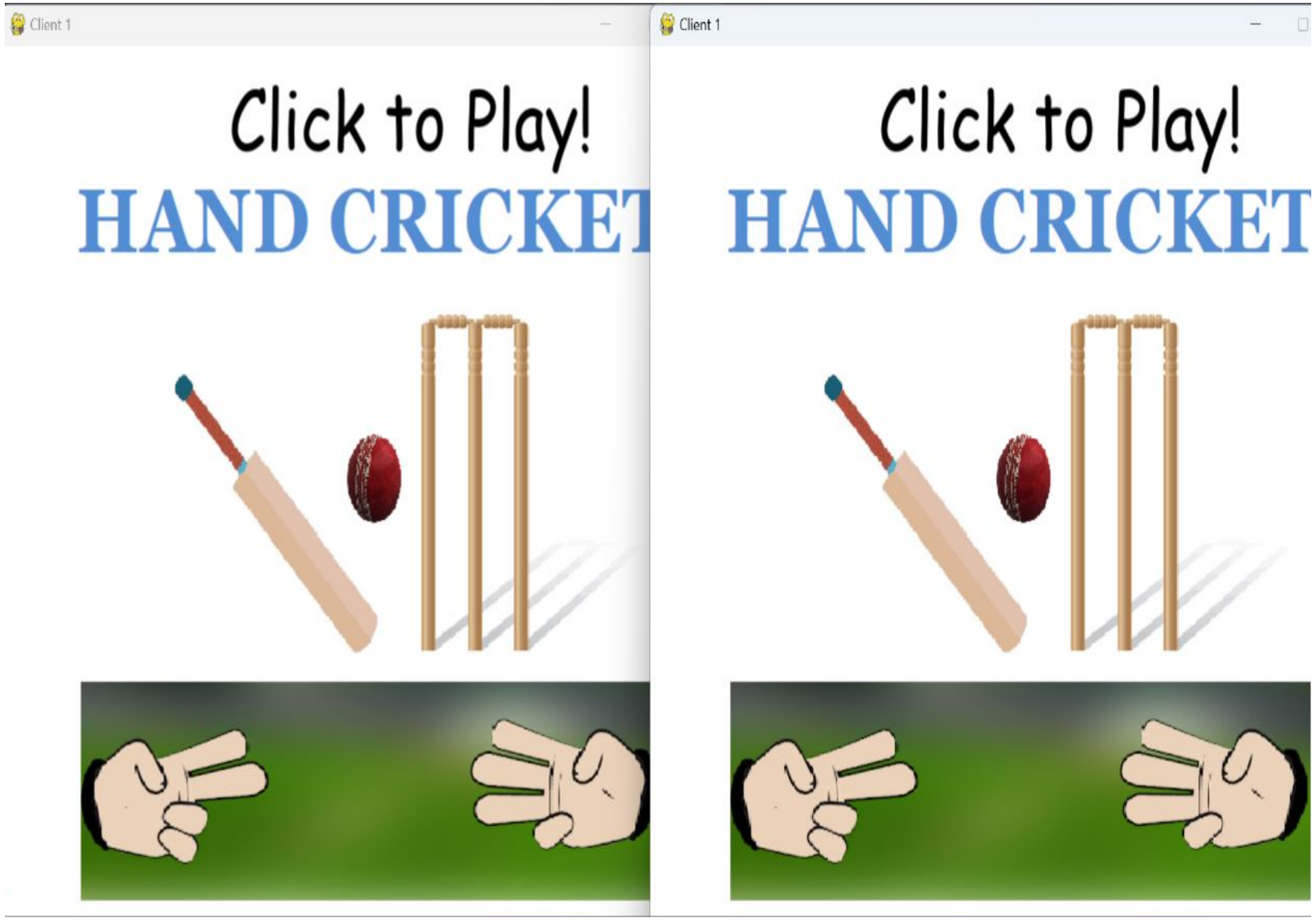
- This is a console based application where you can visualize the hand-cricket game. players can fix their target runs and play against the computer as opponent. Wickets will be counted and runs will be displayed at each play.

- In this version of Hand Cricket, the first player is a real person and the second player is the computer.
- The player throws one of these moves in front of the webcam as per their choice which is converted into its respective number between 0 and 6, and simultaneously the computer selects a number between 0 and 6 randomly.
- If both(player and computer) throw the same number, the batsman is out!.
- In the first innings, the person always bats first and computer bowls first and unless the computer takes the wicket of the person, the score of the person keeps on adding as per their move.
- When the computer takes the wicket of the person, the computer starts batting and adding up its score and the person has to take the wicket of the computer before they beat the person's score.

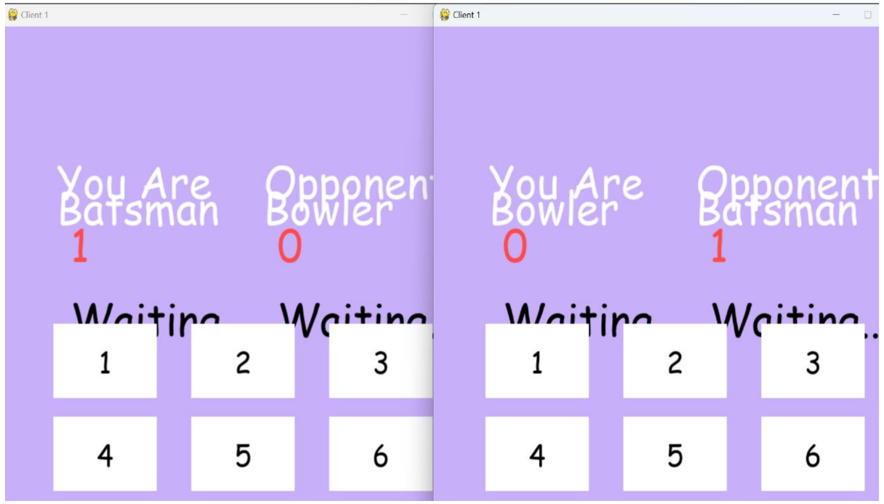
Output Interface



Output Interface



Output Interface

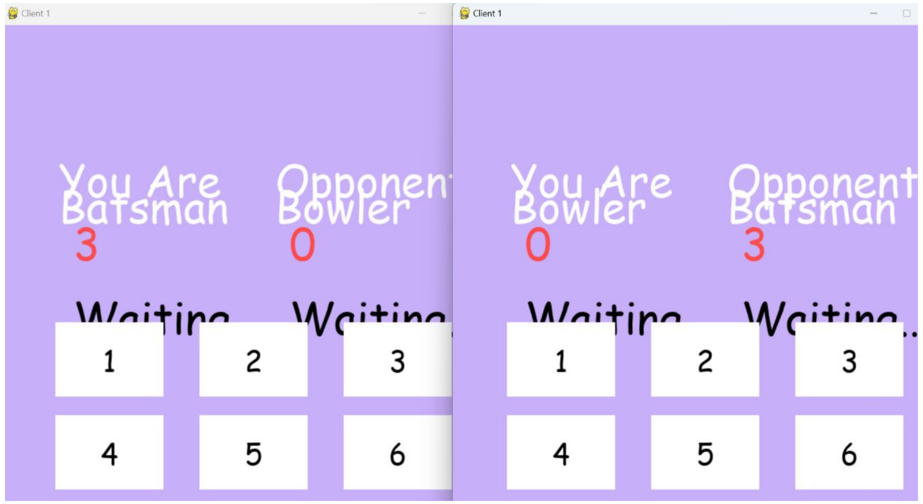


You Are Batsman
1
Waiting

Opponent Bowler
0
Waiting

You Are Bowler
0
Waiting

Opponent Batsman
1
Waiting...

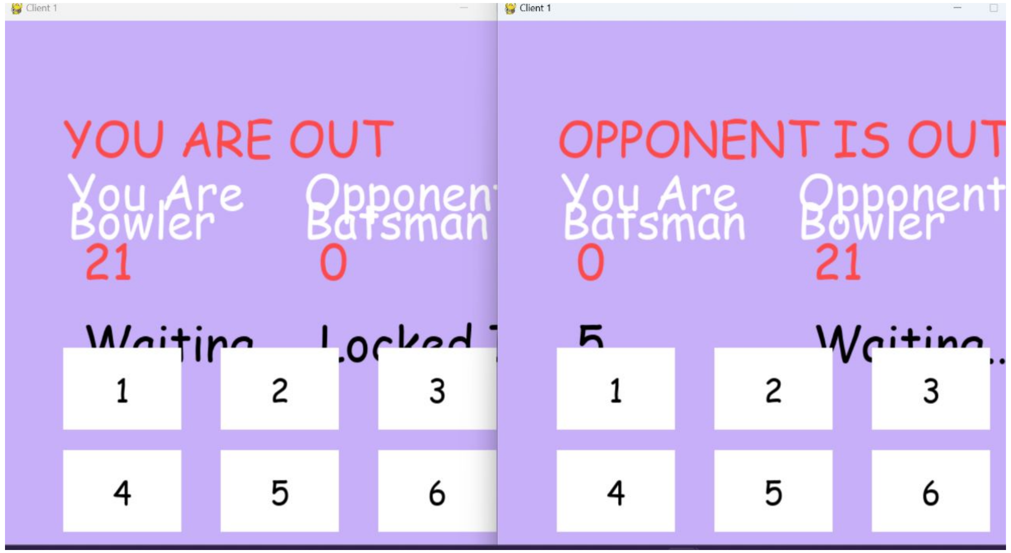


You Are Batsman
3
Waiting

Opponent Bowler
0
Waiting

You Are Bowler
0
Waiting

Opponent Batsman
3
Waiting...



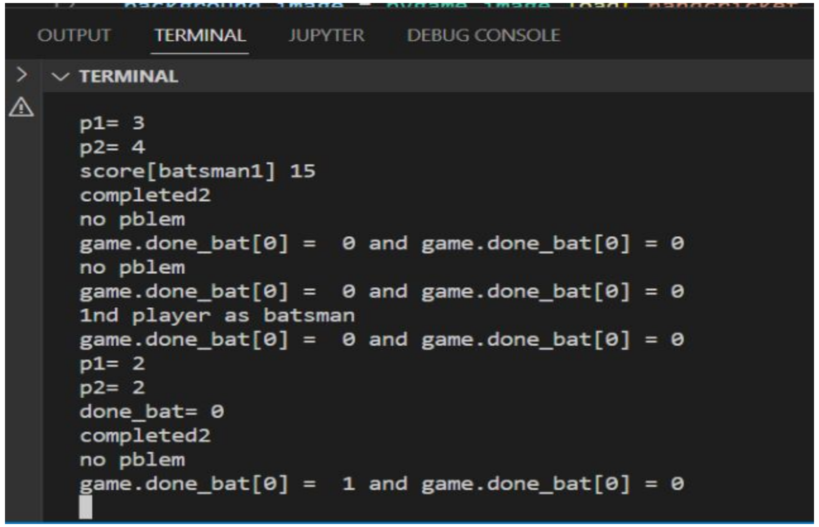
YOU ARE OUT
You Are Bowler
21
Waiting

Opponent Batsman
0
Locked I

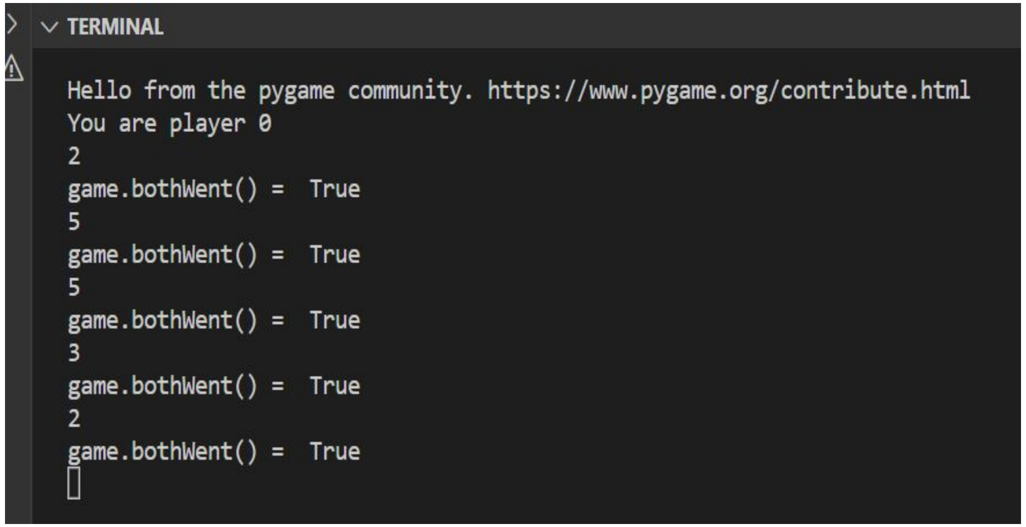
OPPONENT IS OUT
You Are Batsman
0
5

Opponent Bowler
21
Waiting...

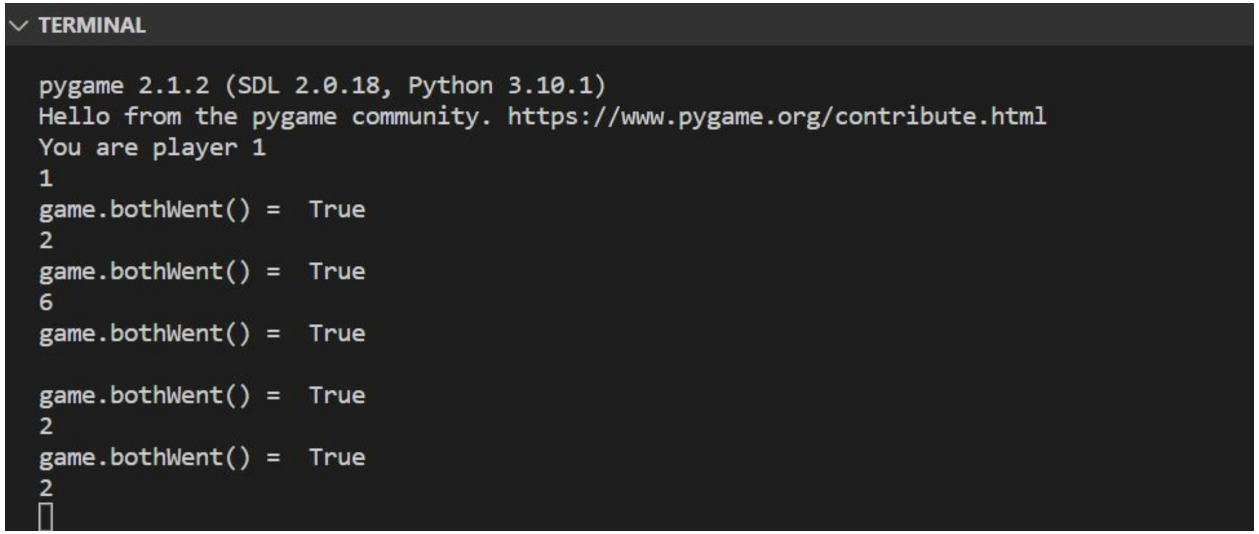
Terminal Result



```
p1= 3
p2= 4
score[batsman1] 15
completed2
no pblem
game.done_bat[0] =  0 and game.done_bat[0] = 0
no pblem
game.done_bat[0] =  0 and game.done_bat[0] = 0
1nd player as batsman
game.done_bat[0] =  0 and game.done_bat[0] = 0
p1= 2
p2= 2
done_bat= 0
completed2
no pblem
game.done_bat[0] =  1 and game.done_bat[0] = 0
```



```
Hello from the pygame community. https://www.pygame.org/contribute.html
You are player 0
2
game.bothWent() =  True
5
game.bothWent() =  True
5
game.bothWent() =  True
3
game.bothWent() =  True
2
game.bothWent() =  True
```



```
pygame 2.1.2 (SDL 2.0.18, Python 3.10.1)
Hello from the pygame community. https://www.pygame.org/contribute.html
You are player 1
1
game.bothWent() =  True
2
game.bothWent() =  True
6
game.bothWent() =  True

game.bothWent() =  True
2
game.bothWent() =  True
2
```

Conclusion

We have Successfully Executed the Socket programming Project “Hand Cricket” by establishing the connection between the client and the server which implies the use of TCP protocol.

To Support the Above statement we got the desired output which is posted in the above section.

References

- https://docs.python.org/3/library/tkinter.html
- https://www.pygame.org/news