

Socket Programming Project (NFL)



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Idea for Project

- I will be creating a NFL server that provides brief information about all of the teams.
- In this server, the user will be able to ask a variety of questions and receive answers that are specific to each team.
 - Where is the team from? (Where are the Cardinals from? Arizona)
 - When was the last time they won a Super Bowl? (particular year, and if they've never won it will return a statement saying they have never won the super bowl)

Server Code 1/2

```
#Defining the host and port
import socket
HOST='localhost'
PORT=5000
BUFSIZE=1024
ADDRESS=(HOST,PORT)
server=socket.socket() #FIRST STEP creating a socket
server.bind(ADDRESS)    #SECOND STEP binding the socket to a certain address
server.listen(1)

#dictionary/list of all NFL teams and their location, as well as last super bowl
teams = {"Falcons":["Atlanta",0],
        "Cardinals":["Arizona",0],
        "Ravens":["Baltimore",2013],
        "Bills":["Buffalo",0],
        "Panthers":["Carolina",0],
        "Bears":["Chicago",1986],
        "Bengals":["Cincinnati",0],
        "Browns":["Cleveland",0],
        "Cowboys":["Dallas",1996],
        "Broncos":["Denver",2016],
        "Lions":["Detroit",0],
        "Packers":["Green Bay",2011],
        "Texans":["Houston",0],
        "Colts":["Indianapolis",2007],
        "Jaguars":["Jacksonville",0],
        "Chiefs":["Kansas City",2023],
        "Raiders":["Las Vegas",1984],
        "Chargers":["Los Angeles",0],
        "Rams":["Los Angeles",2022],
        "Dolphins":["Miami",1974],
        "Vikings":["Minnesota",0],
        "Patriots":["New England",2019],
        "Saints":["New Orleans",2010],
        "Giants":["New York",2012],
        "Jets":["New York",1969],
        "Eagles":["Philadelphia",2018],
        "Steelers":["Pittsburgh",2009],
        "49ers":["San Francisco",1995],
        "Seahawks":["Seattle",2014],
        "Buccaneers":["Tampa Bay",2021],
        "Titans":["Tennessee",0],
        "Commanders":["Washington",1992]
}
```

Server Code 2/2

```
def get_team_info(teamName): #creating NFL teams dictionary
    if teamName in teams: #looking for the information (location/year) of each team
        location = teams[teamName][0]
        year = teams[teamName][1]
        if year == 0:
            return f"The {teamName} are from {location} and they've never won the Super Bowl."
        else:
            return f"The {teamName} are from {location} and last won a Super Bowl in {year}."
    else:
        return "Sorry, that is not a current NFL team. Try Again."

while True: #outer loop to accept connection from client
    print("waiting for a connection...")
    (client,address)=server.accept() #accepting the connection
    print("connection from:",address,"has been made!")
    client.send("Welcome to NFL Trivia!".encode()) #string.encode, sending starting message to the client

    while True: #inner loop to send the information to the client
        teamName = client.recv(BUFSIZE).decode()
        if not teamName:
            break
        else:
            print(teamName) #ensures that the server received the team name
            team_info = get_team_info(teamName)
            client.send(team_info.encode()) #sends the information of the team to the client

server_socket.close() #close both the socket and the client
```



Client Code

```
#Defining host and port
import socket
HOST='localhost'
PORT=5000
BUFSIZE=1024
ADDRESS=(HOST,PORT)
client=socket.socket()
client.connect(ADDRESS)
print(client.recv(1024).decode()) #Receiving the "Welcome to NFL Trivia!" message

while True: #question for the user to begin the trivia, input
    teamName = input("Which team would you like to know about? or press enter to quit: ")
    #send the name of the team to the server, then receive the information back and print it
    client.send(teamName.encode()) #sends the input (team name) to the server
    team_info = client.recv(BUFSIZE).decode() #receives the information
    print(team_info) #displays the information sentence

client_socket.close()
```



Server Side of the Program

>>>

```
Python 3.11.1 (tags/v3.11.1:a7a450f, Dec 6 2022, 19:58:39) [MSC v.1934 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
```

```
=== RESTART: C:\Users\carte\Downloads\CYSE250\SOCKETPROJECTserver.py ===
```

```
waiting for a connection...
```

```
connection from: ('127.0.0.1', 51781) has been made!
```

```
Cardinals
```

```
49ers
```

```
Jaguars
```

```
Sharks
```



Client Side of the Program

>>>

```
Python 3.11.1 (tags/v3.11.1:a7a450f, Dec 6 2022, 19:58:39) [MSC v.1934 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
```

```
=== RESTART: C:\Users\carte\Downloads\CYSE250\SOCKETPROJECTclient.py ===
Welcome to NFL Trivia!
Which team would you like to know about? or press enter to quit: Cardinals
The Cardinals are from Arizona and they've never won the Super Bowl.
Which team would you like to know about? or press enter to quit: 49ers
The 49ers are from San Francisco and last won a Super Bowl in 1995.
Which team would you like to know about? or press enter to quit: Jaguars
The Jaguars are from Jacksonville and they've never won the Super Bowl.
Which team would you like to know about? or press enter to quit: Sharks
Sorry, that is not a current NFL team. Try Again.
Which team would you like to know about? or press enter to quit:
```