

Diana Y Solorzano

CYSE 250 – Cybersecurity Programming and Networking

Professor AlDabagh, Hind

Final Project

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Project Description / Goal

For my final project, I will be creating an interactive Music Trivia game. My game will begin by prompting the user to enter their name and then allow them to choose from 4 different genres, each containing 5 questions. As the user answers each question, the program will inform the user if they have answered correctly and then proceed to the next question. At the same time, the program will keep track of the answers submitted by the user and will keep track of their score. After answering all the questions, the program will convert the users' scores into a percentage and display it along with their guesses and correct answers. Finally, the program will save the users' score and save it to a file named gamescore.txt.

Details

To create the program I will be using IDLE (Python 3.12 64-bit), which is a free Python programming software that can be downloaded from <https://www.python.org/downloads/>. I will be running IDLE on a 2021 Microsoft Surface Laptop 4. The Surface Laptop features 11th Gen Intel(R) Core(TM) i7-1185G7 with 16 GB of RAM.

Code

Server Code:

```
# SERVER

import socket
HOST="localhost"
PORT=5000
ADDRESS=(HOST,PORT)
server=socket.socket()
server.bind(ADDRESS)
server.listen()

while True:
    print("Waiting for a connection...")
```

```
(client,address)=server.accept()
print("Connected to ",address)
client.send("Welcome to the server ".encode())
```

```
while True:
    message=client.recv(1024).decode()
    if not message:
        print("Client is disconnected")
        client.close()
        break
    else:
        print(message)
        message2=input(">")
        client.send(message2.encode())
```

Client Code:

```
# CLIENT

import socket
HOST="localhost"
PORT=5000
ADDRESS=(HOST,PORT)
client=socket.socket()
client.connect(ADDRESS)
print(client.recv(1024).decode())

name = input("\n\nPlease enter your name: ")
print()
print()
print("Welcome to the Music Trivia Game",name,"!")
print()
print()
```

```

genre = input("Please select a genre \nA.RnB B.Hip Hop C.Rock
D.Country\n\n").upper()
print()
if genre == "A":
    questions = ("\n\nWhich singer sang 'Pony' -released in 1996?\n",
                 "\n\nWhich singer sang 'Always On Time' -released in 2001?\n",
                 "\n\nWhich singer sang 'Say My Name' -released in 1999?\n",
                 "\n\nWhich singer sang 'Family Affair' -released in 2001?\n",
                 "\n\nWhich singer sang 'Into You' -released in 2003?\n")
    options = (("A.Lauryn Hill", "\nB.Nelly", "\nC.Ginuwine", "\nD.TLC\n"),
              ("A.Aaliya", "\nB.Destiny's Child", "\nC.Faith Evans", "\nD.Ja Rule\n"),
              ("A.Destiny's Child", "\nB.Nelly", "\nC.Aahanti", "\nD.JoJo\n"),
              ("A.Usher", "\nB.Mary J. Blige", "\nC.Mario", "\nD.Kelly Rowland\n"),
              ("A.Nelly", "\nB.Miguel", "\nC.Boyz II Men", "\nD.Fabolous\n"))
    answers = ("C", "D", "A", "B", "D")
    guesses = []
    score = 0
    questionNum = 0

    for i in questions:

print("\n\n*****")
print(i)
    for i in options[questionNum]:
        print(i)

    guess = input("Enter A, B, C, or D\n").upper()
    guesses.append(guess)
    if guess == answers[questionNum]:
        score += 1

```

```

        print("\nCorrect!! On to the next one.")
    else:
        print("\nWrong answer!! \nOn to the next question.\n")
        print(f"{answers[questionNum]} is the correct answer!")
        questionNum += 1

print("\n\n*****")
print("\nResults")
print("\n\nAnswers: ", end="")
for i in answers:
    print(i, end=" ")
print("\n\nGuesses: ", end="")
for i in guesses:
    print(i, end=" ")
print()
print()
score = int(score / len(questions) * 100)

print("Congrats ", name, ", your score is ", score, "%")
print("\nYour score will be saved in gamescores.txt. \nThanks for playing!")

file1 = open('gamescores.txt', 'w')
file1.write(name + " : " + str(score))
file1.close()

elif genre == "B":
    questions = ("\n\nWhich singer sang 'Get Low' -released in 2022?\n",
                 "\n\nWhich singer sang 'It Ain't Hard to Tell' -released in 1994?\n",

```

```

"\n\nWhich singer sang 'Ms. Jackson' -released in 2000?\n",
"\n\nWhich singer sang 'Protect Ya Neck' -released in 2001?\n",
"\n\nWhich singer sang 'What You Know' -released in 2006?\n")
options = (("A.Jay Z", "\nB.Bone Thugs-N-Harmony", "\nC.Lil John", "\nD.Rick
Ross\n"),
("A.Outkast", "\nB.A Tribe Called Quest", "\nC.M.I.A.", "\nD.Nas\n"),
("A.Outkast", "\nB.Wu-Tang Clan", "\nC.Drake", "\nD.JoJo\n"),
("A.Jay-Z", "\nB.Wu-Tang Clan", "\nC.Nas", "\nD.Kanye West\n"),
("A.Snoop Dog", "\nB.Lil Wayne", "\nC.Ice T", "\nD.T.I.\n"))
answers = ("C", "D", "A", "B", "D")
guesses = []
score = 0
questionNum = 0

for i in questions:

print("\n\n*****
*****")
    print(i)
    for i in options[questionNum]:
        print(i)

    guess = input("Enter A, B, C, or D\n").upper()
    guesses.append(guess)
    if guess == answers[questionNum]:
        score += 1
        print("\nCorrect!! On to the next one.")
    else:
        print("\nWrong answer!! \nOn to the next question.\n")
        print(f"{answers[questionNum]} is the correct answer!")
    questionNum += 1

```

```
print("\n\n*****")
*****")
```

```
print("\nResults")
```

```
print("\n\nAnswers: ", end="")
```

```
for i in answers:
```

```
    print(i, end=" ")
```

```
print("\n\nGuesses: ", end="")
```

```
for i in guesses:
```

```
    print(i, end=" ")
```

```
print()
```

```
print()
```

```
score = int(score / len(questions) * 100)
```

```
print("Congrats ", name, ", your score is ", score, "%")
```

```
print("\nYour score will be saved in gamescores.txt. \nThanks for playing!")
```

```
file1 = open('gamescores.txt', 'w')
```

```
file1.write(name + " : " + str(score))
```

```
file1.close()
```

```
elif genre == "C":
```

```
    questions = ("\n\nWhich singer sang 'Whole Lotta Love' -released in 1969?\n",
```

```
                "\n\nWhich singer sang 'Smells Like Teen Spirit' -released in 1991?\n",
```

```
                "\n\nWhich singer sang 'Under The Bridge' -released in 1991?\n",
```

```
                "\n\nWhich singer sang 'Seven Nation Army' -released in 2003?\n",
```

```
                "\n\nWhich singer sang 'Come Out and Play' -released in 1994?\n")
```

```
    options = (("A.The Beatles", "\nB.Nirvana", "\nC.Led Zeppelin", "\nD.The White Stripes\n"),
```

```

        ("A.The Smiths", "\nB.Led Zeppelin", "\nC.Jimi Hendrix", "\nD.Nirvana\n"),
        ("A.Red Hot Chili Peppers", "\nB.Nirvana", "\nC.The Smiths",
"\nD.Radiohead\n"),
        ("A.Green Day", "\nB.White Stripes", "\nC.Radiohead", "\nD.The
Offspring\n"),
        ("A.Nirvana", "\nB.No Doubt", "\nC.Foo Fighters", "\nD.The Offspring\n"))
answers = ("C", "D", "A", "B", "D")
guesses = []
score = 0
questionNum = 0

for i in questions:

print("\n\n*****
*****")
    print(i)
    for i in options[questionNum]:
        print(i)

    guess = input("Enter A, B, C, or D\n").upper()
    guesses.append(guess)
    if guess == answers[questionNum]:
        score += 1
        print("\nCorrect!! On to the next one.")
    else:
        print("\nWrong answer!! \nOn to the next question.\n")
        print(f"{answers[questionNum]} is the correct answer!")
    questionNum += 1

print("\n\n*****
*****")

```

```
print("\nResults")
print("\n\nAnswers: ", end="")
for i in answers:
    print(i, end=" ")
print("\n\nGuesses: ", end="")
for i in guesses:
    print(i, end=" ")
print()
print()
score = int(score / len(questions) * 100)
```

```
print("Congrats ", name, ", your score is ", score, "%")
print("\nYour score will be saved in gamescores.txt. \nThanks for playing!")
```

```
file1 = open('gamescores.txt', 'w')
file1.write(name + " : " + str(score))
file1.close()
```

```
elif genre == "D":
    questions = ("\n\nWhich singer sang 'Last Night' -released in 2023?\n",
                 "\n\nWhich singer sang 'Heaven' -released in 2017?\n",
                 "\n\nWhich singer sang 'Tennessee Whiskey' -released in 2015?\n",
                 "\n\nWhich singer sang 'Cruise' -released in 2012?\n",
                 "\n\nWhich singer sang 'Wagon Wheel' -released in 2013?\n")
    options = (("A.Kane Brown", "\nB.Luke Bryan", "\nC.Morgan Wallen", "\nD.Tim
McGraw\n"),
              ("A.Zac Brown", "\nB.Brad Paisley", "\nC.Zach Bryan", "\nD.Kane Brown\n"),
              ("A.Chris Stapleton", "\nB.Luke Bryan", "\nC.Carrie Underwood", "\nD.Florida
Georgia Line\n"),
```

```
        ("A.Blake Shelton", "\nB.Florida Georgia Line", "\nC.Taylor Swift", "\nD.Luke
Combs\n"),
```

```
        ("A.Chris Stapleton", "\nB.Carrie Underwood", "\nC.Kane Brown", "\nD.Darius
Rucker\n"))
```

```
    answers = ("C", "D", "A", "B", "D")
```

```
    guesses = []
```

```
    score = 0
```

```
    questionNum = 0
```

```
    for i in questions:
```

```
print("\n\n*****
*****")
```

```
    print(i)
```

```
    for i in options[questionNum]:
```

```
        print(i)
```

```
    guess = input("Enter A, B, C, or D\n").upper()
```

```
    guesses.append(guess)
```

```
    if guess == answers[questionNum]:
```

```
        score += 1
```

```
        print("\nCorrect!! On to the next one.")
```

```
    else:
```

```
        print("\nWrong answer!! \nOn to the next question.\n")
```

```
        print(f"{answers[questionNum]} is the correct answer!")
```

```
    questionNum += 1
```

```
print("\n\n*****
*****")
```

```
    print("\nResults")
```

```
    print("\n\nAnswers: ", end="")
```

```

for i in answers:
    print(i, end=" ")
print("\n\nGuesses: ", end="")
for i in guesses:
    print(i, end=" ")
print()
print()
score = int(score / len(questions) * 100)

print("Congrats ", name, ", your score is ", score, "%")
print("\nYour score will be saved in gamescores.txt. \nThanks for playing!")

file1 = open('gamescores.txt', 'w')
file1.write(name + " : " + str(score))
file1.close()

else:
    print("Invalid Answer!")

while True:
    name=input(">")
    client.send(message.encode())
    reply=(client.recv(1024)).decode()
    if not reply:
        print("Server Disconnected")
        break
    else:
        print(reply)

```

```
client.close()
```

Loops:

I used For Loops to have the program run through the questions and possible answers from the lists created.

Functions:

I used functions to define certain variables such as the score.

Lists & Dictionaries:

I created lists to condense my code and combine the questions and possible answers for each genre.

Files:

I created a file named gamescore.txt that saves the user's name followed by their score once the game is over.

Strings:

I used strings to display a question and retrieve an input in both name and genre.

Socket Programming:

I created a server and client code that was able to connect using port 5000.