

# Bagram or Twenty plus one

## INTRODUCTION

21, Bagram, or Twenty plus one is a game which progresses by counting up 1 to 21, with the player who calls "21" is eliminated. Here, one player starts counting from 1 to a certain number (usually upto 3), and then the other player continues counting from where the first player left off. Here, the game is played between two players: the first player is the computer, and the second player is the user.

The game's objective is for a player to avoid reaching the count of 21. Each player takes turns entering numbers, and the first player to reach the count of 21 loses the game.

### Step1:

#### Defining a function to find the nearest Multiple of 4

Here we define a function to find the nearest multiple of 4. If the input number is greater than 4, it finds the next multiple of 4. If the input number is less than 4, it returns 4.

### Step2:

#### Defining a function to display message, 'YOU LOSE!'

Here we used a print function to display the message.

### Step3:

#### Defining a function to check whether the entered numbers are consecutive or not

Function 'check(xyz)' is used to check whether the entered numbers are consecutive or not. If they are consecutive, it returns True; otherwise, it returns False.

### Step4:

#### Main function

In the main function, we used while loop to start the game along with if/else/elif statements. The player can opt first or second chance. The entered numbers will be appended to a list 'xyz'.

## CODE

**# Python code to play 21 Number game**

**# returns the nearest multiple to 4**

**def nearestMultiple(num):**

**if num >= 4:**

**near = num + (4 - (num % 4))**

**else:**

**near = 4**

**return near**

**def lose1():**

**print("\n\nYOU LOSE !")**

**print("Better luck next time !")**

**exit(0)**

**# checks whether the numbers are consecutive**

**def check(xyz):**

**i = 1**

**while i < len(xyz):**

**if (xyz[i] - xyz[i - 1]) != 1:**

**return False**

**i = i + 1**

**return True**

**# starts the game**

**def start1():**

**xyz = []**

**last = 0**

**while True:**

**print("Enter 'F' to take the first chance.")**

**print("Enter 'S' to take the second chance.")**

**chance = input('> ')**

**# player takes the first chance**

**if chance == "F":**

**while True:**

**if last == 20:**

**lose1()**

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else:
    print("\nYour Turn.")
    print("\nHow many numbers do you wish to enter?")
    inp = int(input('> '))

    if inp > 0 and inp <= 3:
        comp = 4 - inp
    else:
        print("Wrong input. You are disqualified from the game.")
        lose1()

i, j = 1, 1

print("Now enter the values")
while i <= inp:
    a = input('> ')
    a = int(a)
    xyz.append(a)
    i = i + 1

# store the last element of xyz.
last = xyz[-1]

# checks whether the input
# numbers are consecutive
if check(xyz) == True:
    if last == 21:
        lose1()

    else:
        # "Computer's turn."
        while j <= comp:
            xyz.append(last + j)
            j = j + 1
        print("Order of inputs after computer's turn is: ")
        print(xyz)
        last = xyz[-1]
    else:
        print("\nYou did not input consecutive integers.")
        lose1()

# player takes the second chance
elif chance == "S":
    comp = 1
    last = 0

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while last < 20:
    # "Computer's turn"
    j = 1
    while j <= comp:
        xyz.append(last + j)
        j = j + 1
    print("Order of inputs after computer's turn is:")
    print(xyz)
    if xyz[-1] == 20:
        lose1()

else:
    print("\nYour turn.")
    print("\nHow many numbers do you wish to enter?")
    inp = input('> ')
    inp = int(inp)
    if inp < 0 or inp > 3:
        print("Wrong input. You are disqualified from the game.")
        lose1()
    i = 1
    print("Enter your values")
    while i <= inp:
        xyz.append(int(input('> ')))
        i = i + 1
    last = xyz[-1]
    if check(xyz) == True:
        # print (xyz)
        near = nearestMultiple(last)
        comp = near - last
        if comp == 4:
            comp = 3
        else:
            comp = comp
    else:
        # if inputs are not consecutive
        # automatically disqualified
        print("\nYou did not input consecutive integers.")
        # print ("You are disqualified from the game.")
        lose1()
    print("\n\nCONGRATULATIONS !!!")
    print("YOU WON !")
    exit(0)

else:
    print("wrong choice")

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game = True
while game == True:
    print("Player 2 is Computer.")
    print("Do you want to play the 21 number game? (Yes / No)")
    ans = input('> ')
    if ans == 'Yes' or ans == 'yes':
        start1()
    else:
        print("Do you want quit the game?(yes / no)")
        nex = input('> ')
        if nex == "yes":
            print("You are quitting the game...")
            exit(0)
        elif nex == "no":
            print("Continuing...")
        else:
            print("Wrong choice")
```