Assignment-8

ELP - 718 Telecomm Software Laboratory

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A report presented for the assignment on
Python

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1 Problem Statement-1

1.1 Problem Statement

Parity Check The simplest way of error detection is to append a single bit, called a parity check, to a string of data bits. This parity check bit has the value **1** if the number of 1's in the bit string is even and has the value **0** otherwise, i.e., Odd Parity Check.

Bit-Oriented Framing Data Link Layer needs to pack bits into frames so that each frame is distinguishable from another. Frames can be fixed or variable size. In variable size framing, we define the end of the frame using a bit-oriented approach. It uses a special string of bits, called a flag for both idle fills and to indicate the beginning and the ending of frames.
The bit stuffing rule is to insert a **0** after each appearance of **010** in the original data.
The string **0101** is used as the bit string or flag to indicate the end of the frame.

1.2 Assumptions

- We are assuming that if number of **one's** is **even** then we add **'1'**.
- We are assuming that if number of **one's** is **odd** then we add **'0'**
- If we get **'010'** in the bit we have to append **'0'** after that **'010'** bit.

1.3 Algorithm and Implementation

1. Enter the parity bit and we save it as a string.
2. Then we declare variables and lists.
3. Then we use **for loop** for inserting bits one by one and then checking it if '1' or '0' using **if-else**.
4. Then be also add variable inside **if i=='1'** and then check it for even and odd by dividing it by 2 using **if-else command**.
5. Then we append '1' or '0' inside if-else as per condition.
6. Then we print the parity.
7. For 2nd part we just append one by one bit into list using for and **append(i)**.
8. Then we check the list one by one using 3 **if-else command** and inserting '1' using **.insert(..,..)** command and also saving values where we appending '1' in **list y**.
9. Then we put those **y values** and change the **'0'** value.
10. Then we append '0101' in the end
11. Then we print the Transmitting data.

1.4 Program Structure of PS1

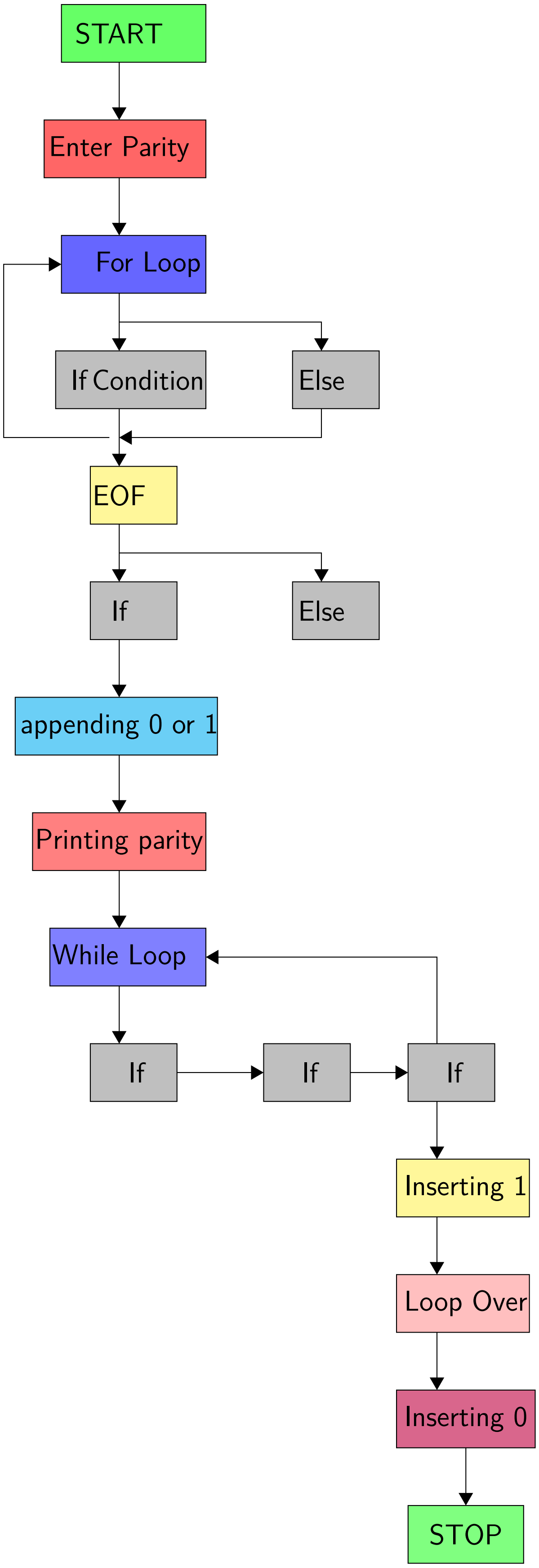


Figure 1: Flow Chart ps1

1.5 Difficulties Issued

- For checking even-odd number of 1's.
- For checking '010' in the parity bits.
- For appending into a string from list.

1.6 Input-Output Format

1.6.1 Input Format

Enter binary bit data that has to be transmitted.

1.6.2 Output Format

Print binary bit data with parity bit.
Print the modified string that is to be transmitted

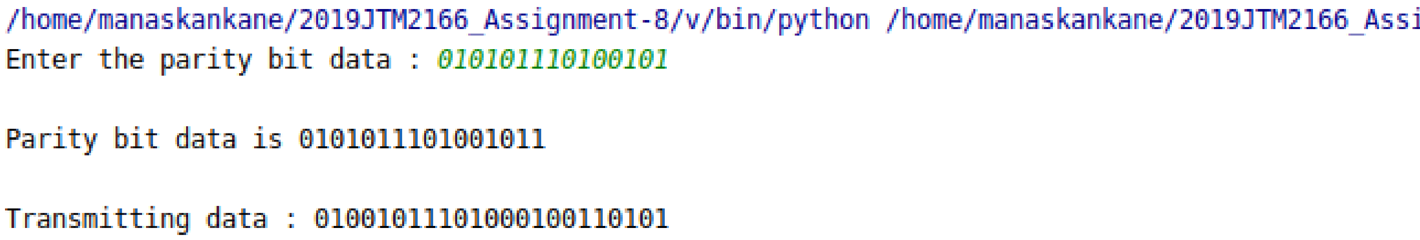
1.6.3 Sample Input

010101110100101

1.6.4 Sample Output

Parity bit data :010101110100101**1**
Transmitting data:010**0**10111010**0**010**0**11**0101**

1.7 Screenshot of PS1



```
/home/manaskankane/2019JTM2166_Assignment-8/v/bin/python /home/manaskankane/2019JTM2166_Assi
Enter the parity bit data : 010101110100101

Parity bit data is 0101011101001011

Transmitting data : 0100101110100010011010
```

Figure 2: Screenshot of PS1

2 Problem Statement-2

2.1 Problem Statement

3X3 Numeric Tic-Tac-Toe (Use numbers 1 to 9 instead of X's and O's) One player plays with the odd numbers (1, 3, 5, 7, 9) and the other player plays with the even numbers (2,4,6,8). All numbers can be used only once. The player who puts down 15 points in a line wins (sum of 3 numbers). Always Player with odd numbers starts the game. Once a line contains two numbers whose sum is 15 or greater, there is no way to complete that line, although filling in the remaining cells might be necessary to complete a different line.
Note – Line can be horizontal, vertical or diagonal

Constraints:

- 1¡=Position¡=9
- 1¡=Number¡=9

Terminal:

- Print 'Welcome to the Game!'.
- Print whether it is Player 1's or Player 2's chance.
- Get the position and number to be entered from the user.
- Show tic tac toe with data
- Continue till the game gets draw or some player wins and show the result.
- Ask the user whether to continue for the next game or exit.

2.2 Assumptions

- We have given a position not less than or equal 1 and not greater than equal to 9.
- We have also given the numbers should be between 1 to 9 with 1 and 9 included.

2.3 Algorithm and Implementation

1. We first declare the list and variable.
2. Then we use **while 1**.
3. Then we ask for choice, players name.
4. Then we slice the list and save it into a string and printing it.
5. Then we use while loop and ask for position and number of player1.

6. Then we insert it into a list and convert a list into a string.
7. Then we add the list numbers and check it for 15, if then player1 wins.
8. If all the rows and coloums sum is greater than 15 then match is draw.
9. Same for player2 and we have taken if-else for checking the position.
10. We have also added the constraint for position, match draw and for exit also.

2.4 Difficulties Issued

- For slicing the list into string.
- For taking while loops and closing it.
- Sending the data from list to string and printing it.
- Adding all the numbers we put and checking for 15 or greater than 15.

2.5 Input-Output Format

2.5.1 Input Format

```
Enter your choice:
Enter the position and number:
```

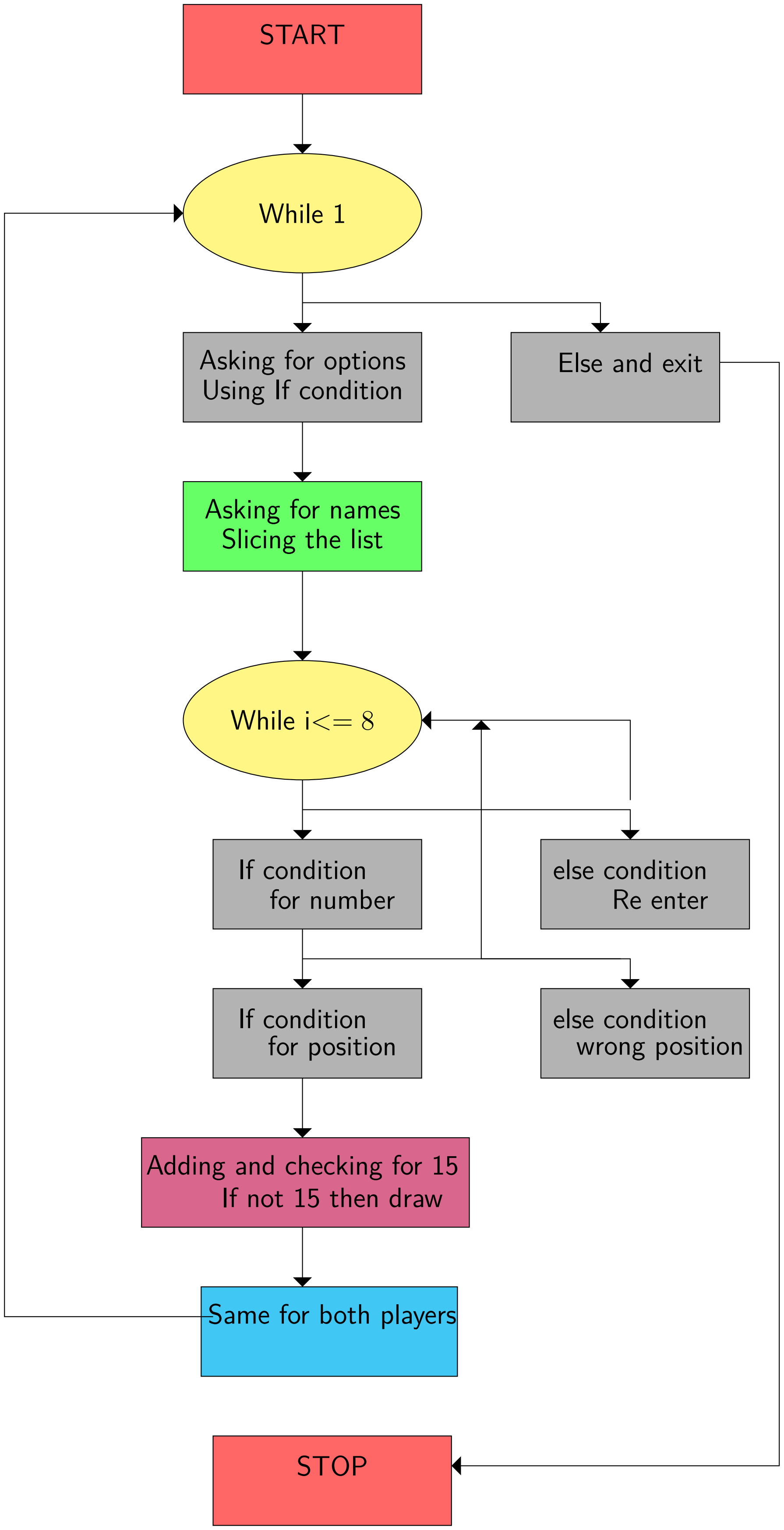
Like this upto 9 turns for both player1 and player2

2.5.2 Output Format

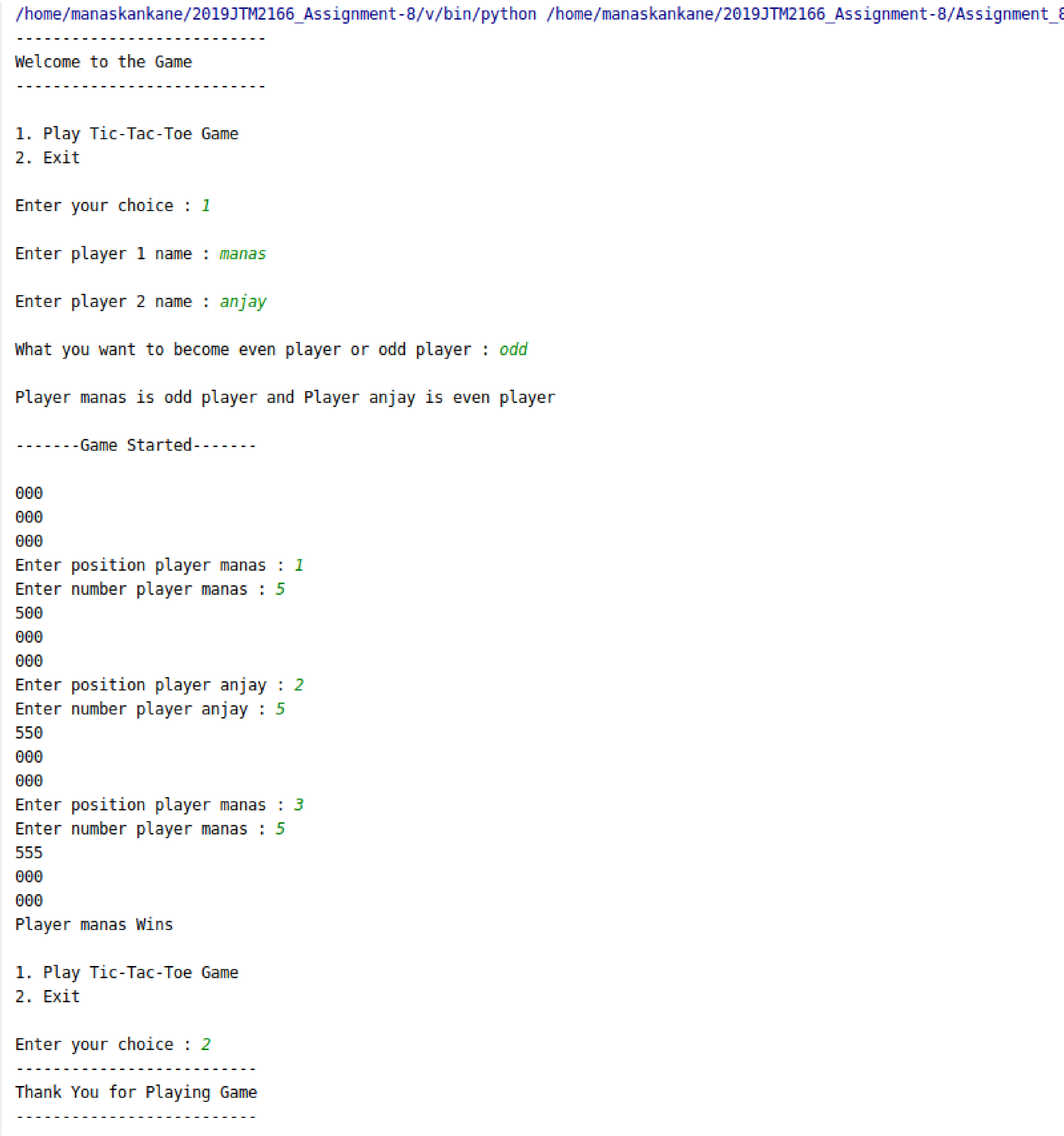
```
Enter your choice: 1
Enter the position and number: 5,3
000
030
000
Enter the position and number: 7,4
000
030
400
```

and soon upto 9 turns.

2.6 Program Structure



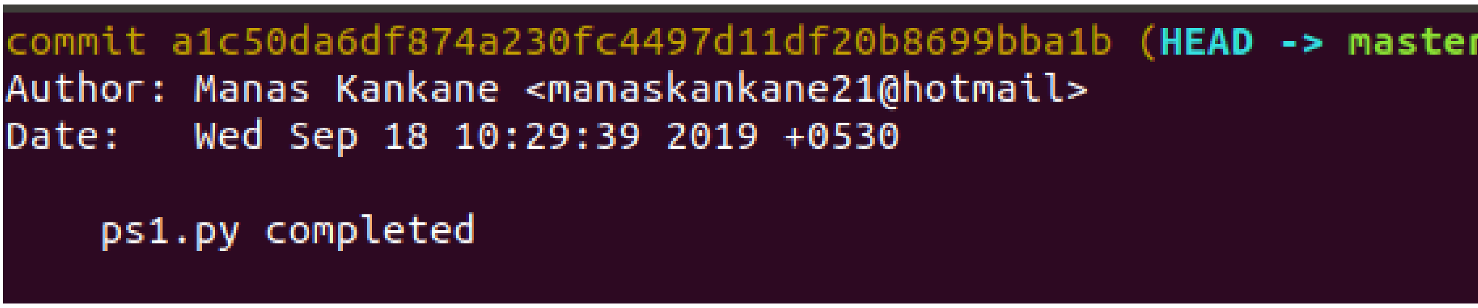
2.7 Screenshot of PS2



```
/home/manaskankane/2019JTM2166_Assignment-8/v/bin/python /home/manaskankane/2019JTM2166_Assignment-8/Assignment_8
---------------------------
Welcome to the Game
---------------------------

1. Play Tic-Tac-Toe Game
2. Exit

Enter your choice : 1

Enter player 1 name : manas

Enter player 2 name : anjay

What you want to become even player or odd player : odd

Player manas is odd player and Player anjay is even player

-------Game Started-------

000
000
000
Enter position player manas : 1
Enter number player manas : 5
500
000
000
Enter position player anjay : 2
Enter number player anjay : 5
550
000
000
Enter position player manas : 3
Enter number player manas : 5
555
000
000
Player manas Wins

1. Play Tic-Tac-Toe Game
2. Exit

Enter your choice : 2
--------------------------
Thank You for Playing Game
--------------------------
```

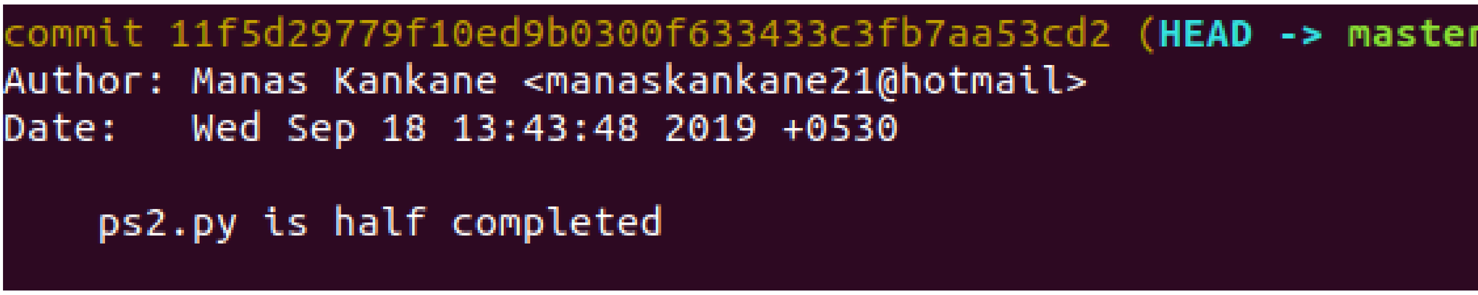
Figure 3: Screenshot of PS2

3 GIT Screenshots



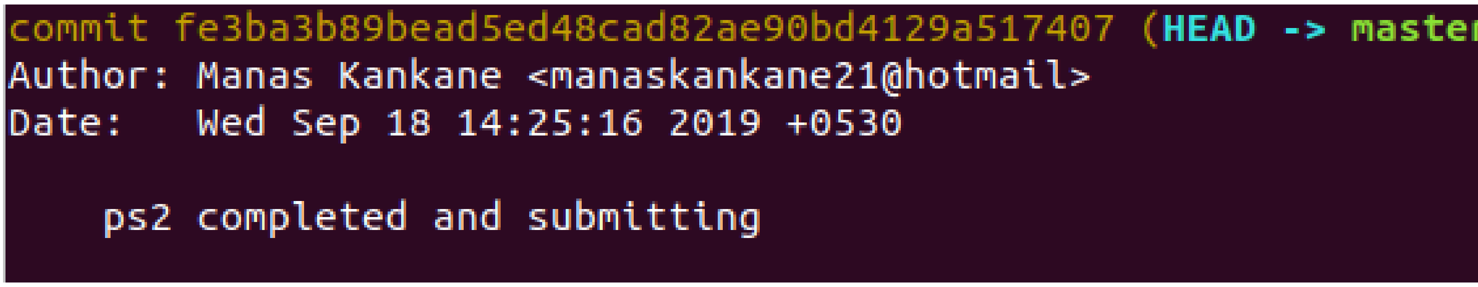
```
commit a1c50da6df874a230fc4497d11df20b8699bba1b (HEAD -> maste
Author: Manas Kankane <manaskankane21@hotmail>
Date:   Wed Sep 18 10:29:39 2019 +0530

    ps1.py completed
```

Figure 4: Screenshot of git1



```
commit 11f5d29779f10ed9b0300f633433c3fb7aa53cd2 (HEAD -> maste
Author: Manas Kankane <manaskankane21@hotmail>
Date:   Wed Sep 18 13:43:48 2019 +0530

    ps2.py is half completed
```

Figure 5: Screenshot of git2



```
commit fe3ba3b89bead5ed48cad82ae90bd4129a517407 (HEAD -> maste
Author: Manas Kankane <manaskankane21@hotmail>
Date:   Wed Sep 18 14:25:16 2019 +0530

    ps2 completed and submitting
```

Figure 6: Screenshot of git3

4 Appendix

4.1 Appendix-ps1

```
a=input('Enter the parity bit data : ')
name=a.split()
b=0
c=0
x=[]
y=[]
for i in a:
if i=='1':
b=b+1
else:
c=0
if b%2==0:
for i in name:
name1=i + '1'
else:
for i in name:
name1 = i + '0'
print('\nParity bit data is {}'.format(name1))
for i in name1:
x.append(i)
#print(x)
while c < len(a):
if x[c]=='0':
if x[c+1]=='1':
if x[c+2]=='0':
x.insert(c+3,'1')
y.append(c+3)
c=c+1
x[y[0]]='0'
x[y[1]]='0'
x[y[2]+1]='0'
x.append('0101')
#print(x)
name2=''.join(x)
print('\nTransmitting data : {}'.format(name2))
```

4.2 Appendix-ps2

```
print('——————————————————————————————')
print('Welcome to the Game')
print('——————————————————————————————')
list1=['0','0','0','0','0','0','0','0','0']
list2=[0,0,0,0,0,0,0,0,0]
a1=0
a2=0
a3=0
a4=0
a5=0
a6=0
a7=0
a8=0
a9=0
x=0
while 1:
```

```
print('\n1. Play Tic-Tac-Toe Game\n2. Exit')
a=int(input('\nEnter your choice : '))
if a==1:
b=str(input('\nEnter player 1 name : '))
c=str(input('\nEnter player 2 name : '))
d=str(input('\nWhat you want to become even player or odd player : '))
print('\nPlayer {} is odd player and Player {} is even player'.format(b,c))
print('\n--------Game Started--------\n')
string=''.join(list1)
print(string[0:3])
print(string[3:6])
print(string[6:9])
while x<=8:
pos1=input('Enter position player {} : '.format(b))
num1=input('Enter number player {} : '.format(b))
if num1 >='1' and num1 <='9':
if pos1=='1':
list1[0]=num1
list2[0]=int(num1)
string = ''.join(list1)
print(string[0:3])
print(string[3:6])
print(string[6:9])
a1=list2[0]
a2=list2[1]
a3 = list2[2]
a4 = list2[3]
a5 = list2[4]
a6 = list2[5]
a7 = list2[6]
a8 = list2[7]
a9 = list2[8]
if (a1+a2+a3)==15 or (a4+a5+a6)==15 or (a7+a8+a9)==15 or (a1+a4+a7)==15 or (a2+a5+
    a8)==15 or (a3+a6+a9)==15 or (a1+a5+a9)==15 or (a3+a5+a7)==15:
print('Player {} Wins'.format(b))
break
if (a1 + a2 + a3) >= 15 and (a4 + a5 + a6) >= 15 and (a7 + a8 + a9) >= 15 and (a1
    + a4 + a7) >= 15 and (a2 + a5 + a8) >= 15 and (a3 + a6 + a9) >= 15 and (a1 + a5
     + a9) >= 15 and (a3 + a5 + a7) >= 15:
print('\n-------Game Draw--------\n')
print('\n-------Better Luck Next Time-------\n')
break
elif pos1=='2':
list1[1] = num1
list2[1] = int(num1)
string = ''.join(list1)
print(string[0:3])
print(string[3:6])
print(string[6:9])
a1 = list2[0]
a2 = list2[1]
a3 = list2[2]
a4 = list2[3]
a5 = list2[4]
a6 = list2[5]
a7 = list2[6]
a8 = list2[7]
a9 = list2[8]
if (a1 + a2 + a3) == 15 or (a4 + a5 + a6) == 15 or (a7 + a8 + a9) == 15 or (a1 +
    a4 + a7) == 15 or (a2 + a5 + a8) == 15 or (a3 + a6 + a9) == 15 or (a1 + a5 + a9
) == 15 or (a3 + a5 + a7) == 15:
print('Player {} Wins'.format(b))
break
if (a1 + a2 + a3) >= 15 and (a4 + a5 + a6) >= 15 and (a7 + a8 + a9) >= 15 and (
a1 + a4 + a7) >= 15 and (a2 + a5 + a8) >= 15 and (a3 + a6 + a9) >= 15 and (
a1 + a5 + a9) >= 15 and (a3 + a5 + a7) >= 15:
print('\n--------Game Draw----------\n')
print('\n--------Better Luck Next Time--------\n')
break
elif pos1=='3':
list1[2] = num1
list2[2] = int(num1)
string = ''.join(list1)
print(string[0:3])
print(string[3:6])
print(string[6:9])
a1 = list2[0]
a2 = list2[1]
a3 = list2[2]
a4 = list2[3]
a5 = list2[4]
a6 = list2[5]
a7 = list2[6]
a8 = list2[7]
a9 = list2[8]
if (a1 + a2 + a3) == 15 or (a4 + a5 + a6) == 15 or (a7 + a8 + a9) == 15 or (a1 + a4 + a7) == 15 or (a2 + a5 + a8) == 15 or (a3 + a6 + a9) == 15 or (a1 + a5 + a9) == 15 or (a3 + a5 + a7) == 15:
print('Player {} Wins'.format(b))
break
if (a1 + a2 + a3) >= 15 and (a4 + a5 + a6) >= 15 and (a7 + a8 + a9) >= 15 and (
a1 + a4 + a7) >= 15 and (a2 + a5 + a8) >= 15 and (a3 + a6 + a9) >= 15 and (
a1 + a5 + a9) >= 15 and (a3 + a5 + a7) >= 15:
print('\n--------Game Draw----------\n')
print('\n--------Better Luck Next Time--------\n')
break
elif pos1=='4':
list1[3] = num1
list2[3] = int(num1)
string = ''.join(list1)
print(string[0:3])
print(string[3:6])
print(string[6:9])
a1 = list2[0]
a2 = list2[1]
a3 = list2[2]
a4 = list2[3]
a5 = list2[4]
a6 = list2[5]
a7 = list2[6]
a8 = list2[7]
a9 = list2[8]
if (a1 + a2 + a3) == 15 or (a4 + a5 + a6) == 15 or (a7 + a8 + a9) == 15 or (a1 + a4 + a7) == 15 or (a2 + a5 + a8) == 15 or (a3 + a6 + a9) == 15 or (a1 + a5 + a9) == 15 or (a3 + a5 + a7) == 15:
print('Player {} Wins'.format(b))
break
if (a1 + a2 + a3) >= 15 and (a4 + a5 + a6) >= 15 and (a7 + a8 + a9) >= 15 and (
a1 + a4 + a7) >= 15 and (a2 + a5 + a8) >= 15 and (a3 + a6 + a9) >= 15 and (
a1 + a5 + a9) >= 15 and (a3 + a5 + a7) >= 15:
```

```python
print('\n------Game Draw-------\n')
print('\n------Better Luck Next Time------\n')
break
elif pos1=='5':
list1[4] = num1
list2[4] = int(num1)
string = ''.join(list1)
print(string[0:3])
print(string[3:6])
print(string[6:9])
a1 = list2[0]
a2 = list2[1]
a3 = list2[2]
a4 = list2[3]
a5 = list2[4]
a6 = list2[5]
a7 = list2[6]
a8 = list2[7]
a9 = list2[8]
if (a1 + a2 + a3) == 15 or (a4 + a5 + a6) == 15 or (a7 + a8 + a9) == 15 or (a1 + a4 + a7) == 15 or (a2 + a5 + a8) == 15 or (a3 + a6 + a9) == 15 or (a1 + a5 + a9) == 15 or (a3 + a5 + a7) == 15:
print('Player {} Wins'.format(b))
break
if (a1 + a2 + a3) >= 15 and (a4 + a5 + a6) >= 15 and (a7 + a8 + a9) >= 15 and (
a1 + a4 + a7) >= 15 and (a2 + a5 + a8) >= 15 and (a3 + a6 + a9) >= 15 and (
a1 + a5 + a9) >= 15 and (a3 + a5 + a7) >= 15:
print('\n------Game Draw-------\n')
print('\n------Better Luck Next Time------\n')
break
elif pos1=='6':
list1[5] = num1
list2[5] = int(num1)
string = ''.join(list1)
print(string[0:3])
print(string[3:6])
print(string[6:9])
a1 = list2[0]
a2 = list2[1]
a3 = list2[2]
a4 = list2[3]
a5 = list2[4]
a6 = list2[5]
a7 = list2[6]
a8 = list2[7]
a9 = list2[8]
if (a1 + a2 + a3) == 15 or (a4 + a5 + a6) == 15 or (a7 + a8 + a9) == 15 or (a1 + a4 + a7) == 15 or (a2 + a5 + a8) == 15 or (a3 + a6 + a9) == 15 or (a1 + a5 + a9) == 15 or (a3 + a5 + a7) == 15:
print('Player {} Wins'.format(b))
break
if (a1 + a2 + a3) >= 15 and (a4 + a5 + a6) >= 15 and (a7 + a8 + a9) >= 15 and (a1 + a4 + a7) >= 15 and (a2 + a5 + a8) >= 15 and (a3 + a6 + a9) >= 15 and (a1 + a5 + a9) >= 15 and (a3 + a5 + a7) >= 15:
print('\n------Game Draw-------\n')
print('\n------Better Luck Next Time------\n')
break
elif pos1=='7':
list1[6] = num1
list2[6] = int(num1)
```

```python
string = ''.join(list1)
print(string[0:3])
print(string[3:6])
print(string[6:9])
a1 = list2[0]
a2 = list2[1]
a3 = list2[2]
a4 = list2[3]
a5 = list2[4]
a6 = list2[5]
a7 = list2[6]
a8 = list2[7]
a9 = list2[8]
if (a1 + a2 + a3) == 15 or (a4 + a5 + a6) == 15 or (a7 + a8 + a9) == 15 or (a1 + a4 + a7) == 15 or (a2 + a5 + a8) == 15 or (a3 + a6 + a9) == 15 or (a1 + a5 + a9) == 15 or (a3 + a5 + a7) == 15:
print('Player {} Wins'.format(b))
break
if (a1 + a2 + a3) >= 15 and (a4 + a5 + a6) >= 15 and (a7 + a8 + a9) >= 15 and (a1 + a4 + a7) >= 15 and (a2 + a5 + a8) >= 15 and (a3 + a6 + a9) >= 15 and (a1 + a5 + a9) >= 15 and (a3 + a5 + a7) >= 15:
print('\n---------Game Draw----------\n')
print('\n---------Better Luck Next Time---------\n')
break
elif pos1=='8':
list1[7] = num1
list2[7] = int(num1)
string = ''.join(list1)
print(string[0:3])
print(string[3:6])
print(string[6:9])
a1 = list2[0]
a2 = list2[1]
a3 = list2[2]
a4 = list2[3]
a5 = list2[4]
a6 = list2[5]
a7 = list2[6]
a8 = list2[7]
a9 = list2[8]
if (a1 + a2 + a3) == 15 or (a4 + a5 + a6) == 15 or (a7 + a8 + a9) == 15 or (a1 + a4 + a7) == 15 or (a2 + a5 + a8) == 15 or (a3 + a6 + a9) == 15 or (a1 + a5 + a9) == 15 or (a3 + a5 + a7) == 15:
print('Player {} Wins'.format(b))
break
if (a1 + a2 + a3) >= 15 and (a4 + a5 + a6) >= 15 and (a7 + a8 + a9) >= 15 and (a1 + a4 + a7) >= 15 and (a2 + a5 + a8) >= 15 and (a3 + a6 + a9) >= 15 and (a1 + a5 + a9) >= 15 and (a3 + a5 + a7) >= 15:
print('\n---------Game Draw----------\n')
print('\n---------Better Luck Next Time---------\n')
break
elif pos1=='9':
list1[8] = num1
list2[8] = int(num1)
string = ''.join(list1)
print(string[0:3])
print(string[3:6])
print(string[6:9])
a1 = list2[0]
a2 = list2[1]
```

```
a3 = list2[2]
a4 = list2[3]
a5 = list2[4]
a6 = list2[5]
a7 = list2[6]
a8 = list2[7]
a9 = list2[8]
if (a1 + a2 + a3) == 15 or (a4 + a5 + a6) == 15 or (a7 + a8 + a9) == 15 or (a1 + a4 + a7) == 15 or (a2 + a5 + a8) == 15 or (a3 + a6 + a9) == 15 or (a1 + a5 + a9) == 15 or (a3 + a5 + a7) == 15:
print('Player {} Wins'.format(b))
break
if (a1 + a2 + a3) >= 15 and (a4 + a5 + a6) >= 15 and (a7 + a8 + a9) >= 15 and (a1 + a4 + a7) >= 15 and (a2 + a5 + a8) >= 15 and (a3 + a6 + a9) >= 15 and (a1 + a5 + a9) >= 15 and (a3 + a5 + a7) >= 15:
print('\n------Game Draw-------\n')
print('\n------Better Luck Next Time------\n')
break
else:
print('\n--------Game Error--------\n')
print('You entered wrong position')
print('\nEnter Again\n')
continue

pos2 = input('Enter position player {} : '.format(c))
num2 = input('Enter number player {} : '.format(c))
if num2 >= '1' and num2 <= '9':
if pos2 == '1':
list1[0] = num2
list2[0] = int(num2)
string = ''.join(list1)
print(string[0:3])
print(string[3:6])
print(string[6:9])
a1 = list2[0]
a2 = list2[1]
a3 = list2[2]
a4 = list2[3]
a5 = list2[4]
a6 = list2[5]
a7 = list2[6]
a8 = list2[7]
a9 = list2[8]
if (a1 + a2 + a3) == 15 or (a4 + a5 + a6) == 15 or (a7 + a8 + a9) == 15 or (a1 + a4 + a7) == 15 or (
a2 + a5 + a8) == 15 or (a3 + a6 + a9) == 15 or (a1 + a5 + a9) == 15 or (a3 + a5 + a7) == 15:
print('Player {} Wins'.format(c))
break
if (a1 + a2 + a3) >= 15 and (a4 + a5 + a6) >= 15 and (a7 + a8 + a9) >= 15 and (a1 + a4 + a7) >= 15 and (a2 + a5 + a8) >= 15 and (a3 + a6 + a9) >= 15 and (a1 + a5 + a9) >= 15 and (a3 + a5 + a7) >= 15:
print('\n------Game Draw-------\n')
print('\n------Better Luck Next Time------\n')
break
elif pos2 == '2':
list1[1] = num2
list2[1] = int(num2)
string = ''.join(list1)
print(string[0:3])
print(string[3:6])
print(string[6:9])
a1 = list2[0]
a2 = list2[1]
a3 = list2[2]
a4 = list2[3]
a5 = list2[4]
a6 = list2[5]
a7 = list2[6]
a8 = list2[7]
a9 = list2[8]
if (a1 + a2 + a3) == 15 or (a4 + a5 + a6) == 15 or (a7 + a8 + a9) == 15 or (a1 + a4 + a7) == 15 or (
a2 + a5 + a8) == 15 or (a3 + a6 + a9) == 15 or (a1 + a5 + a9) == 15 or (a3 + a5 + a7) == 15:
print('Player {} Wins'.format(c))
break
if (a1 + a2 + a3) >= 15 and (a4 + a5 + a6) >= 15 and (a7 + a8 + a9) >= 15 and (a1 + a4 + a7) >= 15 and (a2 + a5 + a8) >= 15 and (a3 + a6 + a9) >= 15 and (a1 + a5 + a9) >= 15 and (a3 + a5 + a7) >= 15:
print('\n---------Game Draw---------\n')
print('\n---------Better Luck Next Time---------\n')
break
elif pos2 == '3':
list1[1] = num2
list2[1] = int(num2)
string = ''.join(list1)
print(string[0:3])
print(string[3:6])
print(string[6:9])
a1 = list2[0]
a2 = list2[1]
a3 = list2[2]
a4 = list2[3]
a5 = list2[4]
a6 = list2[5]
a7 = list2[6]
a8 = list2[7]
a9 = list2[8]
if (a1 + a2 + a3) == 15 or (a4 + a5 + a6) == 15 or (a7 + a8 + a9) == 15 or (a1 + a4 + a7) == 15 or (
a2 + a5 + a8) == 15 or (a3 + a6 + a9) == 15 or (a1 + a5 + a9) == 15 or (a3 + a5 + a7) == 15:
print('Player {} Wins'.format(c))
break
if (a1 + a2 + a3) >= 15 and (a4 + a5 + a6) >= 15 and (a7 + a8 + a9) >= 15 and (a1 + a4 + a7) >= 15 and (a2 + a5 + a8) >= 15 and (a3 + a6 + a9) >= 15 and (a1 + a5 + a9) >= 15 and (a3 + a5 + a7) >= 15:
print('\n---------Game Draw---------\n')
print('\n---------Better Luck Next Time---------\n')
break
elif pos2 == '4':
list1[1] = num2
list2[1] = int(num2)
string = ''.join(list1)
print(string[0:3])
print(string[3:6])
print(string[6:9])
a1 = list2[0]
a2 = list2[1]
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a3 = list2[2]
a4 = list2[3]
a5 = list2[4]
a6 = list2[5]
a7 = list2[6]
a8 = list2[7]
a9 = list2[8]
if (a1 + a2 + a3) == 15 or (a4 + a5 + a6) == 15 or (a7 + a8 + a9) == 15 or (a1 + a4 + a7) == 15 or (
a2 + a5 + a8) == 15 or (a3 + a6 + a9) == 15 or (a1 + a5 + a9) == 15 or (a3 + a5 + a7) == 15:
print('Player {} Wins'.format(c))
break
if (a1 + a2 + a3) >= 15 and (a4 + a5 + a6) >= 15 and (a7 + a8 + a9) >= 15 and (a1 + a4 + a7) >= 15 and (a2 + a5 + a8) >= 15 and (a3 + a6 + a9) >= 15 and (a1 + a5 + a9) >= 15 and (a3 + a5 + a7) >= 15:
print('\n------Game Draw-------\n')
print('\n------Better Luck Next Time------\n')
break
elif pos2 == '5':
list1[1] = num2
list2[1] = int(num2)
string = ''.join(list1)
print(string[0:3])
print(string[3:6])
print(string[6:9])
a1 = list2[0]
a2 = list2[1]
a3 = list2[2]
a4 = list2[3]
a5 = list2[4]
a6 = list2[5]
a7 = list2[6]
a8 = list2[7]
a9 = list2[8]
if (a1 + a2 + a3) == 15 or (a4 + a5 + a6) == 15 or (a7 + a8 + a9) == 15 or (a1 + a4 + a7) == 15 or (
a2 + a5 + a8) == 15 or (a3 + a6 + a9) == 15 or (a1 + a5 + a9) == 15 or (a3 + a5 + a7) == 15:
print('Player {} Wins'.format(c))
break
if (a1 + a2 + a3) >= 15 and (a4 + a5 + a6) >= 15 and (a7 + a8 + a9) >= 15 and (a1 + a4 + a7) >= 15 and (a2 + a5 + a8) >= 15 and (a3 + a6 + a9) >= 15 and (a1 + a5 + a9) >= 15 and (a3 + a5 + a7) >= 15:
print('\n------Game Draw-------\n')
print('\n------Better Luck Next Time------\n')
break
elif pos2 == '6':
list1[1] = num2
list2[1] = int(num2)
string = ''.join(list1)
print(string[0:3])
print(string[3:6])
print(string[6:9])
a1 = list2[0]
a2 = list2[1]
a3 = list2[2]
a4 = list2[3]
a5 = list2[4]
a6 = list2[5]
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a7 = list2[6]
a8 = list2[7]
a9 = list2[8]
if (a1 + a2 + a3) == 15 or (a4 + a5 + a6) == 15 or (a7 + a8 + a9) == 15 or (a1 + a4 + a7) == 15 or (
a2 + a5 + a8) == 15 or (a3 + a6 + a9) == 15 or (a1 + a5 + a9) == 15 or (a3 + a5 + a7) == 15:
print('Player {} Wins'.format(c))
break
if (a1 + a2 + a3) >= 15 and (a4 + a5 + a6) >= 15 and (a7 + a8 + a9) >= 15 and (a1 + a4 + a7) >= 15 and (a2 + a5 + a8) >= 15 and (a3 + a6 + a9) >= 15 and (a1 + a5 + a9) >= 15 and (a3 + a5 + a7) >= 15:
print('\n————Game Draw—————\n')
print('\n————Better Luck Next Time————\n')
break
elif pos2 == '7':
list1[1] = num2
list2[1] = int(num2)
string = ''.join(list1)
print(string[0:3])
print(string[3:6])
print(string[6:9])
a1 = list2[0]
a2 = list2[1]
a3 = list2[2]
a4 = list2[3]
a5 = list2[4]
a6 = list2[5]
a7 = list2[6]
a8 = list2[7]
a9 = list2[8]
if (a1 + a2 + a3) == 15 or (a4 + a5 + a6) == 15 or (a7 + a8 + a9) == 15 or (a1 + a4 + a7) == 15 or (
a2 + a5 + a8) == 15 or (a3 + a6 + a9) == 15 or (a1 + a5 + a9) == 15 or (a3 + a5 + a7) == 15:
print('Player {} Wins'.format(c))
break
if (a1 + a2 + a3) >= 15 and (a4 + a5 + a6) >= 15 and (a7 + a8 + a9) >= 15 and (a1 + a4 + a7) >= 15 and (a2 + a5 + a8) >= 15 and (a3 + a6 + a9) >= 15 and (a1 + a5 + a9) >= 15 and (a3 + a5 + a7) >= 15:
print('\n————Game Draw—————\n')
print('\n————Better Luck Next Time————\n')
break
elif pos2 == '8':
list1[1] = num2
list2[1] = int(num2)
string = ''.join(list1)
print(string[0:3])
print(string[3:6])
print(string[6:9])
a1 = list2[0]
a2 = list2[1]
a3 = list2[2]
a4 = list2[3]
a5 = list2[4]
a6 = list2[5]
a7 = list2[6]
a8 = list2[7]
a9 = list2[8]
if (a1 + a2 + a3) == 15 or (a4 + a5 + a6) == 15 or (a7 + a8 + a9) == 15 or (a1 +
a4 + a7) == 15 or (
a2 + a5 + a8) == 15 or (a3 + a6 + a9) == 15 or (a1 + a5 + a9) == 15 or (a3 + a5 + a7) == 15:
print('Player {} Wins'.format(c))
break
if (a1 + a2 + a3) >= 15 and (a4 + a5 + a6) >= 15 and (a7 + a8 + a9) >= 15 and (a1 + a4 + a7) >= 15 and (a2 + a5 + a8) >= 15 and (a3 + a6 + a9) >= 15 and (a1 + a5 + a9) >= 15 and (a3 + a5 + a7) >= 15:
print('\n--------Game Draw--------\n')
print('\n--------Better Luck Next Time--------\n')
break
elif pos2 == '9':
list1[1] = num2
list2[1] = int(num2)
string = ''.join(list1)
print(string[0:3])
print(string[3:6])
print(string[6:9])
a1 = list2[0]
a2 = list2[1]
a3 = list2[2]
a4 = list2[3]
a5 = list2[4]
a6 = list2[5]
a7 = list2[6]
a8 = list2[7]
a9 = list2[8]
if (a1 + a2 + a3) == 15 or (a4 + a5 + a6) == 15 or (a7 + a8 + a9) == 15 or (a1 + a4 + a7) == 15 or (
a2 + a5 + a8) == 15 or (a3 + a6 + a9) == 15 or (a1 + a5 + a9) == 15 or (a3 + a5 + a7) == 15:
print('Player {} Wins'.format(c))
break
if (a1 + a2 + a3) >= 15 and (a4 + a5 + a6) >= 15 and (a7 + a8 + a9) >= 15 and (a1 + a4 + a7) >= 15 and (a2 + a5 + a8) >= 15 and (a3 + a6 + a9) >= 15 and (a1 + a5 + a9) >= 15 and (a3 + a5 + a7) >= 15:
print('\n--------Game Draw--------\n')
print('\n--------Better Luck Next Time--------\n')
break
else:
print('\n----------Game Error----------\n')
print('You entered wrong position')
print('\nEnter Again\n')
continue

x=x+1
else:
print('------------------------------------')
print('Thank You for Playing Game')
print('------------------------------------')
exit()
```

References

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