

Flow:

1. Print field
2. At round 1, ask player 1 input (and check whether the field to be updated is blank), update field
3. Print field
4. At round 2, ask player 2 input (and check whether the field to be updated is blank), update field
5. Print field ...
6. At round 5,...Check whether player 1 win (note)
7. At round 6,...Check whether player 2 win (note)
- ...
8. At round 9,
...if player 1 does not win, then draw and end

Note:

if either player 1 or player 2 wins, the program will end

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In [1]: def print_field():  
        print()  
        print(field["field1"],field["field2"],field["field3"])  
        print(field["field4"],field["field5"],field["field6"])  
        print(field["field7"],field["field8"],field["field9"])
```

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In [2]: def player1_input_update_field():
        player1_input = input("Would player 1 input X in 1 - 9? ")

        while (player1_input == "1" and field["field1"] != "_") or \
        (player1_input == "2" and field["field2"] != "_") or \
        (player1_input == "3" and field["field3"] != "_") or \
        (player1_input == "4" and field["field4"] != "_") or \
        (player1_input == "5" and field["field5"] != "_") or \
        (player1_input == "6" and field["field6"] != "_") or \
        (player1_input == "7" and field["field7"] != "_") or \
        (player1_input == "8" and field["field8"] != "_") or \
        (player1_input == "9" and field["field9"] != "_"):
            player1_input = input("Would player 1 input X in 1 - 9 which is _? ")

        if player1_input == "1":
            field.update({"field1": "X"})
        if player1_input == "2":
            field.update({"field2": "X"})
        if player1_input == "3":
            field.update({"field3": "X"})
        if player1_input == "4":
            field.update({"field4": "X"})
        if player1_input == "5":
            field.update({"field5": "X"})
        if player1_input == "6":
            field.update({"field6": "X"})
        if player1_input == "7":
            field.update({"field7": "X"})
        if player1_input == "8":
            field.update({"field8": "X"})
        if player1_input == "9":
            field.update({"field9": "X"})
```

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In [3]: def player2_input_update_field():
        player2_input = input("Would player 2 input 0 in 1 - 9? ")

        while (player2_input == "1" and field["field1"] != "_") or \
        (player2_input == "2" and field["field2"] != "_") or \
        (player2_input == "3" and field["field3"] != "_") or \
        (player2_input == "4" and field["field4"] != "_") or \
        (player2_input == "5" and field["field5"] != "_") or \
        (player2_input == "6" and field["field6"] != "_") or \
        (player2_input == "7" and field["field7"] != "_") or \
        (player2_input == "8" and field["field8"] != "_") or \
        (player2_input == "9" and field["field9"] != "_"):
            player2_input = input("Would player 2 input 0 in 1 - 9 which is _? ")

        if player2_input == "1":
            field.update({"field1": "0"})
        if player2_input == "2":
            field.update({"field2": "0"})
        if player2_input == "3":
            field.update({"field3": "0"})
        if player2_input == "4":
            field.update({"field4": "0"})
        if player2_input == "5":
            field.update({"field5": "0"})
        if player2_input == "6":
            field.update({"field6": "0"})
        if player2_input == "7":
            field.update({"field7": "0"})
        if player2_input == "8":
            field.update({"field8": "0"})
        if player2_input == "9":
            field.update({"field9": "0"})
```

```
In [4]: def check_player_win():
    if (field["field1"] == field["field2"] and field["field2"] == field["field3"] and field["field3"] != "_") or \
    (field["field4"] == field["field5"] and field["field5"] == field["field6"] and field["field6"] != "_") or \
    (field["field7"] == field["field8"] and field["field8"] == field["field9"] and field["field9"] != "_") or \
    (field["field1"] == field["field4"] and field["field4"] == field["field7"] and field["field7"] != "_") or \
    (field["field2"] == field["field5"] and field["field5"] == field["field8"] and field["field8"] != "_") or \
    (field["field3"] == field["field6"] and field["field6"] == field["field9"] and field["field9"] != "_") or \
    (field["field1"] == field["field5"] and field["field5"] == field["field9"] and field["field9"] != "_") or \
    (field["field3"] == field["field5"] and field["field5"] == field["field7"] and field["field7"] != "_") :
        if (round % 2) == 1:
            print ("Player 1 win")
        if (round % 2) == 0:
            print ("Player 2 win")
    field.update({"Win":1})
```

```

In [6]: round = 0
        field = {
            "field1" : "_",
            "field2" : "_",
            "field3" : "_",
            "field4" : "_",
            "field5" : "_",
            "field6" : "_",
            "field7" : "_",
            "field8" : "_",
            "field9" : "_",
            "Win" : 0
        }
        print("field1 field2 field3")
        print("field4 field5 field6")
        print("field7 field8 field9")
        print_field()

        while field["Win"] == 0:
            round = round + 1
            player1_input_update_field()
            print_field()
            if round >= 5:
                check_player_win()

            if field["Win"] == 1:
                break
            if round == 9:
                print ("Draw")
                break

            round = round + 1
            player2_input_update_field()
            print_field()
            if round >= 6:
                check_player_win()

```

```

field1 field2 field3
field4 field5 field6
field7 field8 field9

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```

Would player 1 input X in 1 - 9? 1

X _ _

_ _ _

_ _ _

Would player 2 input 0 in 1 - 9? 1

Would player 2 input 0 in 1 - 9 which is _? 5

X _ _

_ 0 _

_ _ _

Would player 1 input X in 1 - 9? 9

X _ _

_ 0 _

_ _ X

Would player 2 input 0 in 1 - 9? 2

X 0 _

_ 0 _

_ _ X

Would player 1 input X in 1 - 9? 4

X 0 _

X 0 _

_ _ X

Would player 2 input 0 in 1 - 9? 8

X 0 _

X 0 _

_ 0 X

Player 2 win

Scenario

Draw: 124587369

Player 1 win: 1258476

Player 2 win: 159248

