# MINI PROJECT-2: (FLAMES)

## 1. Problem Statement:

Write a program to play the FLAMES game, which determines the relationship status between two people based on their names.

## 2.Problem Analysis:

The FLAMES game is a popular game that determines the relationship status between two people based on their names. The game works by:

- Removing common characters from the two names.
- Counting the remaining characters.
- Using this count to remove letters from the FLAMES array.
- The final letter left in the array determines the relationship status.

## 3.Algorithm:

- Take two names as input from the user.
- Convert the names to lowercase.
- Remove common characters from both names.
- Calculate the count of remaining characters.
- Define the FLAMES array.
- Remove letters from the FLAMES array using the count.
- Get the result (the final letter left in the array).
- Map the result to a relationship status.
- Output the result.

## 4.Pseudo Code:

```
INPUT: player1, player2
player1_lower = convert player1 to lowercase
player2_lower = convert player2 to lowercase
common_chars = intersection of player1_lower and player2_lower
remaining_chars1 = player1_lower - common_chars
remaining_chars2 = player2_lower - common_chars
count = length of remaining_chars1 + length of remaining_chars2
flames_array = ['F', 'L', 'A', 'M', 'E', 'S']
index = 0
```

while length of flames_array > 1
    index = (index + count - 1) % length of flames_array
    remove element at index from flames_array
end while
result = last element of flames_array
status_map = {
    'F': 'Friends',
    'L': 'Lovers',
    'A': 'Affectionate',
    'M': 'Marriage',
    'E': 'Enemies',
    'S': 'Siblings'
}
status = status_map[result]
OUTPUT: status

## 5.Analysis:

The time complexity of this algorithm is O(n), where n is the length of the longer name. This is because we need to iterate through the characters of both names to remove common characters and calculate the count. The space complexity is O(1), since we only use a fixed amount of space to store the FLAMES array and the result.

## 6.Code:

```
def flames(player1, player2):

    common_chars = set(player1.lower()) & set(player2.lower())
     remaining_chars1 = [char for char in player1.lower() if char not in
common_chars]
     remaining_chars2 = [char for char in player2.lower() if char not in
common_chars]



    count = len(remaining_chars1) + len(remaining_chars2)


    flames_array = ['F', 'L', 'A', 'M', 'E', 'S']


    index = 0
    while len(flames_array) > 1:
```

```
        index = (index + count - 1) % len(flames_array)
        flames_array.pop(index)

    result = flames_array[0]

    status_map = {
        'F': 'Friends',
        'L': 'Lovers',
        'A': 'Affectionate',
        'M': 'Marriage',
        'E': 'Enemies',
        'S': 'Siblings'
    }
    status = status_map[result]

    return status

def main():
    print("Welcome to the FLAMES game!")
    player1 = input("Enter the first player's name: ")
    player2 = input("Enter the second player's name: ")
    status = flames(player1, player2)
    print(f"Status = {status}")

if __name__ == "__main__":
    main()
```

## 7.Output:

```
PS C:\Users\maddu\OneDrive\Documents\GitHub\minor-project-2-> & C:/Users/maddu/AppData/Local/Programs/Python/Python312/python.exe c:/Users/maddu/OneDrive/Documents/GitHub/minor-project-2-/flamesminorpro2daa.py
Welcome to the FLAMES game!
Enter the first player's name: pruthvee
Enter the second player's name: priyanka
Status = Affectionate
PS C:\Users\maddu\OneDrive\Documents\GitHub\minor-project-2->
```

**...–The End–...**