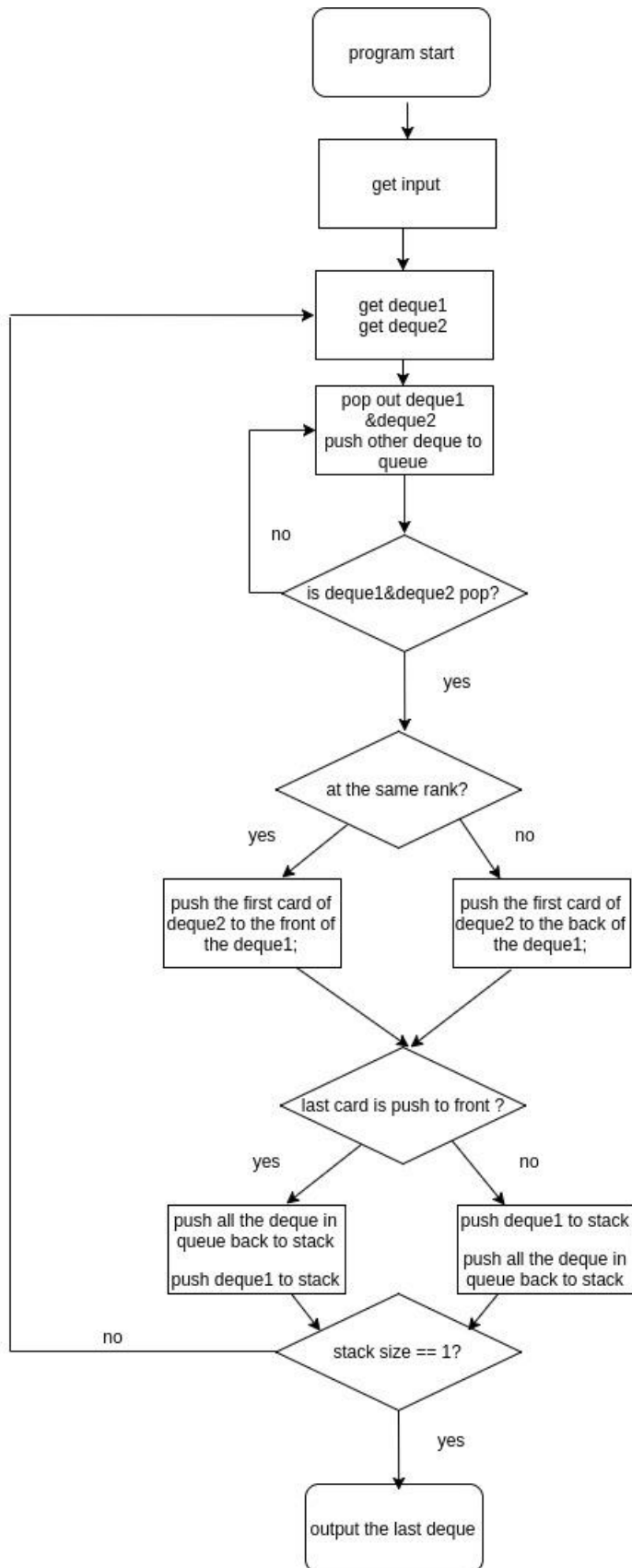


Flow chart



pseudo code

```
while(input!=#)
    get the deque and push into stack;

while(stack size != 1)
{
    get two number from the file;
    deque1 = stack[first number];
    deque2 = stack[second number];

    while(1)
        push the unused deque to queue until the deque1, deque2 are pop out;

    while(until the deque2 was empty)
    {
        compare the first card of deque1 and the first card of deque2;
        if (the card in the same rank(same number or same pic))
            push the first card of deque2 to the front of the deque1;
        else
            push the first card of deque2 to the back of the deque1;
    }

    if (the last card is push to front)
    {
        push all the deque in queue back to stack;
        push deque1 to stack;
    }
    else
    {
        push deque1 to stack;
        push all the deque in queue back to stack;
    }
}

print out the deque in stack;
```

time complexity

$$7 + 2\max(\text{first number, second number}) + 5*\text{sizeof}(\text{deque2}) + 2*\text{sizeof}(\text{queue}) + 1 + 2 + 2*\text{sizeof}(\text{deque})$$
$$= 10 + 2\max(\text{first number, second number}) + 5*\text{sizeof}(\text{deque2}) + 2*\text{sizeof}(\text{queue}) + 2*\text{sizeof}(\text{deque})$$
$$= 10 + 2n + 5n + 2n + 2n$$
$$= 11n + 10$$
$$= O(n)$$