

Foop Homework3 Report

Name and ID

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Compile and Run

- Compile: **make**
- Run: **make run**
- Clear: **make clean**

How to Play

Old Maid

This is the original version. There are **54** cards in the game. (**13** cards for each suit and **2** cards representing the ghosts) The players take turns to draw a random card from the next player. If one of the players has **2** cards with same number (**2** to **A**) on his hand, he can drop the cards. The one who drops all the cards becomes the winner. However, the only person having cards (**R0** and **B0**) on hand at the end of the game is the loser.

Varient One

This is one of the variants from **Old Maid**. There are still **54** cards in this game, but the **2** extra cards are not **B0** and **R0**. Instead, we put only one ghost (**B0**) into the card deck, followed by another **S8**. Thus, the card deck contains **5** cards of number **8** (**C8**, **D8**, **H8**, **S8**, **S8**) and **1** ghost (**B0**). The other rules are the same as **Old Maid**.

Varient Two

This is another variant from **Old Maid**. There are only **51** cards in this game, since we remove **1** card (**SA**) from the traditional deck. Thus, the card deck contains only **3** cards of number **A** (**CA**, **DA**, **HA**). The other rules are the same as **Old Maid**.

Test of Correctness

The output of the program is the process of the **3** games. By reading the output message, I am able to check if there exists any error.

Sample Input/Output

```
Origin Version
Deal cards
Player0: C3 D4 C5 D6 H6 S6 H8 C9 C10 CJ HJ HK CA HA
Player1: C2 D2 S2 D3 C4 H4 S5 C6 C7 D7 C8 D8 SQ SK
Player2: R0 H2 S4 H5 S8 D10 H10 S10 SJ CQ DQ DK DA
Player3: B0 H3 S3 D5 H7 S7 D9 H9 S9 DJ HQ CK SA
Drop cards
```

```
Player0: C3 D4 C5 S6 H8 C9 C10 HK
Player1: S2 D3 S5 C6 SQ SK
Player2: R0 H2 S4 H5 S8 S10 SJ DK DA
Player3: B0 D5 S9 DJ HQ CK SA
Game start
Player0 draws a card from Player1 C6
Player0: C3 D4 C5 H8 C9 C10 HK
Player1: S2 D3 S5 SQ SK
...
Player3 draws a card from Player0 SK
Player3: B0 SQ SK
Player0:
Player0 wins
Basic game over
Continue
...
Player2 draws a card from Player3 SK
Player2: R0 B0
Player3:
Player3 wins
Bonus game over
Variant One
Deal cards
Player0: C2 D2 C3 D3 H3 D5 H5 S5 S6 D8 H8 C10 D10 H10
Player1: C4 H4 C5 C6 C7 S7 C9 H9 S9 SJ SQ CA DA HA
Player2: B0 S2 S3 H6 H7 S8 S8 D9 S10 DK HK SK SA
Player3: H2 D4 S4 D6 D7 C8 CJ DJ HJ CQ DQ HQ CK
Drop cards
Player0: H3 S5 S6 H10
Player1: C5 C6 S9 SJ SQ HA
Player2: B0 S2 S3 H6 H7 D9 S10 SK SA
Player3: H2 D6 D7 C8 HJ HQ CK
Game start
Player0 draws a card from Player1 HA
Player0: H3 S5 S6 H10 HA
Player1: C5 C6 S9 SJ SQ
...
Player3 draws a card from Player0 H10
Player3: C8 H10 HJ
Player0:
Player0 wins
Basic game over
Continue
...
Player3 draws a card from Player1 SJ
Player3:
Player1: B0 C8
Player3 wins
Bonus game over
Variant Two
Deal cards
Player0: C2 D3 H3 S3 C4 H5 D6 C7 H7 D8 H8 S9
Player1: H2 S2 S4 S5 C8 C9 H9 C10 S10 SJ HQ CK DA
Player2: D2 D4 C5 D5 S6 S7 S8 H10 DJ DQ SQ HK CA
Player3: C3 H4 C6 H6 D7 D9 D10 CJ HJ CQ DK SK HA
Drop cards
Player0: C2 S3 C4 H5 D6 S9
```

```
Player1: S4 S5 C8 SJ HQ CK DA
Player2: D2 D4 S6 S7 S8 H10 DJ HK CA
Player3: C3 H4 D7 D9 D10 CQ HA
Game start
Player0 draws a card from Player1 S4
Player0: C2 S3 H5 D6 S9
Player1: S5 C8 SJ HQ CK DA
...
Player2 draws a card from Player3 DA
Player2: C2 HQ DA
Player3:
Player3 wins
Basic game over
Continue
...
Player2 draws a card from Player0 D2
Player2:
Player0: DA
Player2 wins
Bonus game over
```

Bonus

I did not implement any extra features. However, I focus on making my source code readable (for example, putting some comments and annotation), which I consider as the key point in this homework.