

Due Date: Tuesday November 23, 2021 at 11.59 pm.

Intermediate Code and Design Submission

To keep track of your progress, an intermediate code submission is required. The deadline for the intermediate code submission on D2L is *Tuesday November 23, 2021 at 11.59 pm*. Late submission policy: 20% deduction per day.

Submit:

1. A high-level design of your code. You are free to use any format that makes sense to your team (e.g., a flowchart with all functions and how the game proceeds, pseudo-code, etc.).
2. An initial code implementation, with
 - a deck of cards being implemented as a linked list
 - a shuffling function that shuffles the deck.
 - a player hand implemented as a linked list
 - a print function that can be used to print the deck or the 5-card player's hand.
3. A skeleton of the remaining code containing all the function prototypes and comments on the input/output of the functions and their intent.

Note:

- Deck can be created in 2 ways (sample code 1/3 or 2/4) – pick one way in your code.
- Suits of the cards can be displayed in 2 ways (sample 1/2 or 3/4) – pick one way in your code.

Sample code execution 1: ASCII art/character is used for suit

Create 52-card deck

A♠ A♦ A♥ A♣ 2♠ 2♦ 2♥ 2♣ 3♠ 3♦ 3♥ 3♣ 4♠
4♦ 4♥ 4♣ 5♠ 5♦ 5♥ 5♣ 6♠ 6♦ 6♥ 6♣ 7♠ 7♦
7♥ 7♣ 8♠ 8♦ 8♥ 8♣ 9♠ 9♦ 9♥ 9♣ 10♠ 10♦ 10♥
10♣ J♠ J♦ J♥ J♣ Q♠ Q♦ Q♥ Q♣ K♠ K♦ K♥ K♣

Deck after Shuffling

A♥ K♣ 10♦ 6♦ J♠ 3♦ 3♥ J♣ 9♠ Q♣ 2♣ 9♦ 8♠
7♦ A♠ 5♥ 7♥ J♦ 10♣ 8♥ 2♥ 2♦ Q♥ Q♠ 7♣ K♦
K♠ A♣ 4♣ 6♣ K♥ J♥ 10♥ 9♥ 5♠ 2♠ 4♦ 3♠ 5♣
10♠ 6♠ 7♠ 9♠ 3♣ 4♠ 8♠ 6♥ 5♦ A♦ 4♥ 8♦ Q♦

The player's hand

A♥ K♣ 10♦ 6♦ J♠

Deck after the hand is created

3♦ 3♥ J♣ 9♠ Q♣ 2♣ 9♦ 8♠ 7♦ A♠ 5♥ 7♥ J♦
10♣ 8♥ 2♥ 2♦ Q♥ Q♠ 7♣ K♦ K♠ A♣ 4♣ 6♣ K♥
J♥ 10♥ 9♥ 5♠ 2♠ 4♦ 3♠ 5♣ 10♠ 6♠ 7♠ 9♠ 3♠
4♠ 8♠ 6♥ 5♦ A♦ 4♥ 8♦ Q♦

Sample code execution 2: ASCII art/character is used for suit

Create 52-card deck

A♠ 2♠ 3♠ 4♠ 5♠ 6♠ 7♠ 8♠ 9♠ 10♠ J♠ Q♠ K♠
A♦ 2♦ 3♦ 4♦ 5♦ 6♦ 7♦ 8♦ 9♦ 10♦ J♦ Q♦ K♦
A♥ 2♥ 3♥ 4♥ 5♥ 6♥ 7♥ 8♥ 9♥ 10♥ J♥ Q♥ K♥
A♣ 2♣ 3♣ 4♣ 5♣ 6♣ 7♣ 8♣ 9♣ 10♣ J♣ Q♣ K♣

Deck after Shuffling

3♠ K♣ Q♥ 9♦ 2♣ 10♠ J♠ 5♣ 7♥ 9♠ 8♠ 8♥ 3♥
K♦ A♠ 6♦ A♥ 3♣ A♣ 5♥ 7♠ 6♠ 8♣ 6♣ 2♥ J♣
10♣ 4♠ 3♦ J♦ Q♣ 4♣ K♥ 9♥ 4♦ 5♠ A♦ 9♠ 7♦
J♥ 8♦ Q♦ 10♥ Q♠ K♠ 6♥ 10♦ 5♦ 2♠ 2♦ 4♥ 7♣

The player's hand

3♠ K♠ Q♥ 9♦ 2♣

Deck after the hand is created

10♠ J♠ 5♣ 7♥ 9♣ 8♠ 8♥ 3♥ K♦ A♠ 6♦ A♥ 3♣
A♣ 5♥ 7♠ 6♠ 8♣ 6♣ 2♥ J♣ 10♣ 4♠ 3♦ J♦ Q♣
4♣ K♥ 9♥ 4♦ 5♠ A♦ 9♠ 7♦ J♥ 8♦ Q♦ 10♥ Q♠
K♠ 6♥ 10♦ 5♦ 2♠ 2♦ 4♥ 7♣

Sample code execution 3: H for Heart, D for Diamond, S for Spade, C for Club

Create 52-card deck

AS AH AC AD 2S 2H 2C 2D 3S 3H 3C 3D 4S
4H 4C 4D 5S 5H 5C 5D 6S 6H 6C 6D 7S 7H
7C 7D 8S 8H 8C 8D 9S 9H 9C 9D 10S 10H 10C
10D JS JH JC JD QS QH QC QD KS KH KC KD

Deck after Shuffling

AC KD 10H 6H JS 3H 3C JD 9S QD 2D 9H 8S
7H AS 5C 7C JH 10D 8C 2C 2H QC QS 7D KH
KS AD 4D 6D KC JC 10C 9C 5S 2S 4H 3S 5D
10S 6S 7S 9D 3D 4S 8D 6C 5H AH 4C 8H QH

The player's hand

AC KD 10H 6H JS

Deck after the hand is created

3H 3C JD 9S QD 2D 9H 8S 7H AS 5C 7C JH
10D 8C 2C 2H QC QS 7D KH KS AD 4D 6D KC
JC 10C 9C 5S 2S 4H 3S 5D 10S 6S 7S 9D 3D
4S 8D 6C 5H AH 4C 8H QH

Sample code execution 4: H for Heart, D for Diamond, S for Spade, C for Club

Create 52-card deck

AS 2S 3S 4S 5S 6S 7S 8S 9S 10S JS QS KS
AH 2H 3H 4H 5H 6H 7H 8H 9H 10H JH QH KH
AC 2C 3C 4C 5C 6C 7C 8C 9C 10C JC QC KC
AD 2D 3D 4D 5D 6D 7D 8D 9D 10D JD QD KD

Deck after Shuffling

3S KD QC 9H 2D 10S JS 5D 7C 9D 8S 8C 3C
KH AS 6H AC 3D AD 5C 7S 6S 8D 6D 2C JD
10D 4S 3H JH QD 4D KC 9C 4H 5S AH 9S 7H
JC 8H QH 10C QS KS 6C 10H 5H 2S 2H 4C 7D

The player's hand

3S KD QC 9H 2D

Deck after the hand is created

10S JS 5D 7C 9D 8S 8C 3C KH AS 6H AC 3D
AD 5C 7S 6S 8D 6D 2C JD 10D 4S 3H JH QD
4D KC 9C 4H 5S AH 9S 7H JC 8H QH 10C QS
KS 6C 10H 5H 2S 2H 4C 7D