

HW2

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```
deck <- read.csv('deck.csv')
deck <- rbind(deck, deck, deck, deck)
head(deck)
```

```
##   face  suit value
## 1 king spades   10
## 2 queen spades  10
## 3 jack spades   10
## 4  ten spades   10
## 5  nine spades   9
## 6 eight spades   8
```

```
shuffle_deck <- function(){
  deck <- deck[sample(1:nrow(deck)), ]
  rownames(deck) <- c(1:208)
  deck
}
head(shuffle_deck())
```

```
##   face  suit value
## 1  ace  clubs    1
## 2 four diamonds  4
## 3  ten  clubs   10
## 4 four  clubs    4
## 5 seven diamonds  7
## 6 king diamonds  10
```

```
start_game <- function() {
  deck <- shuffle_deck()
  dealers <- deck[1:2, ]
  your <- deck[3:4, ]
  i <- 5
  cat('Dealers hand:\n', unlist(dealers[1, ]), '\n', unlist(dealers[2, ]))
  cat('\nsum:', sum(dealers$value))
  cat('\nYour hand:\n', unlist(your[1, ]), '\n', unlist(your[2, ]))
  cat('\nsum:', sum(your$value))
  cat('\nchances:', sum(as.numeric(deck$value <= 21 - sum(your$value)))/dim(deck)[1]*100)
  cat('%')
}
```

```

deal <- function(){
  your[nrow(your) + 1,] <- deck[i, ]
  your
  i <- i+1
  cat('\nDealers hand:\n', unlist(dealers[1, ]),'\n', unlist(dealers[2, ]))
  cat('\nsum:', sum(dealers$value))
  cat('\nYour hand:\n')
  for (j in 1:nrow(your)){
    cat(' ',unlist(your[j, ]),'\n')
  }
  cat('sum:', sum(your$value))
  cat('\nchances:', sum(as.numeric(deck$value <= 21-sum(your$value)))/dim(deck)[1])
  cat('%')
}

```

```

stop_game <- function() {
  if (sum(your$value) > 21){
    cat('\nLose')
  } else {
    if (sum(dealers$value > 21)){
      cat('\nWin')
    } else {
      if (sum(your$value)>sum(dealers$value)){
        cat('\nWin')
      } else {
        cat('\nLose')
      }
    }
  }
}

```

Game1

```
start_game()
```

```

## Dealers hand:
## five diamonds 5
## ten clubs 10
## sum: 15
## Your hand:
## five clubs 5
## queen hearts 10
## sum: 15
## chances: 46.15385%

```

```
deal()
```

```

##
## Dealers hand:
## five diamonds 5
## ten clubs 10

```

```
## sum: 15
## Your hand:
##   five clubs 5
##   queen hearts 10
##   seven diamonds 7
## sum: 22
## chances: 0%
```

```
stop_game()
```

```
##
## Lose
```

Game2

```
start_game()
```

```
## Dealers hand:
##   ace diamonds 1
##   three clubs 3
## sum: 4
## Your hand:
##   jack spades 10
##   five spades 5
## sum: 15
## chances: 46.15385%
```

```
deal()
```

```
##
## Dealers hand:
##   ace diamonds 1
##   three clubs 3
## sum: 4
## Your hand:
##   jack spades 10
##   five spades 5
##   jack spades 10
## sum: 25
## chances: 0%
```

```
stop_game()
```

```
##
## Lose
```