```python
# In this program, we will read data from a file describing a set of stocks
# owned by the user. We will display a summary of those stocks, including
# the total value of the user's portfolio.
def main():
    my_stocks = read_portfolio("portfolio.csv")
    # Take a look at the .csv file before proceeding.

    print_portfolio(my_stocks)
    print("Total value: ${0:0.2f}".format(total_worth(my_stocks)))

# Opens a .csv file containing a portfolio of stocks, and returns a list of
# tuples for those stocks, where each tuple contains a name, a shares count,
# and a value per share.
def read_portfolio(file_name):
    # To open a file, we use the function open(), which is passed a string
    # containing the name of the file we want to open. The file must be in the
    # same location as the .py program. open() returns a list of strings, where
    # each line of the file is an entry in the list, which we can iterate
    # through with a for loop.

    # We will append the stocks to an initially empty list.
    results = []
    for line in open(file_name):
        # In each iteration of this loop, the variable "line" represents one
        # line of text from the file we opened.

        # Seeing those lines, we know they are comma-separated.
        line_split = line.split(",")
        # Construct a tuple for the stock from this line.
        stock = (line_split[0], int(line_split[1]), float(line_split[2]))
        # Append the stock to the list we are building.
        results.append(stock)

    return results

# Prints a summary of each stock in the portfolio list, including the stock's
# name, shares count, price per share, and total net worth.
def print_portfolio(portfolio):
    print("Portfolio:")
    for stock in portfolio:
        # Unpack the tuple into 3 variables.
        (name, shares, price) = stock
        print("{0}: {1} shares @ ${2:0.2f} = ${3:0.2f}".format(\
              name, shares, price, shares * price))

# Gets the total combined worth of all stocks in the given portfolio list.
def total_worth(portfolio):
    total = 0
    for stock in portfolio:
        (name, shares, price) = stock
        total += shares * price
    return total
```

```
53
54  main()
55
```

```
1 GOOG,4,838.55
2 MSFT,50,65.55
3 HPQ,100,17.59
4 ORC,13,1000
5 10,4000,SEGA
```

```python

# Write these functions:

# read_players -- returns a list of player tuples
# print_player -- given a player tuple, print that player's information
# find_player -- given a list of players and a name, returns the tuple for the
#   player with the given name
# find_highest_avg -- given a list of players, returns the tuple for the player
#   with the highest batting average (AVG)

def read_players(file_name):
    pass

def main():
    all_players = read_players("baseball_players.csv")
    choice = 0
    while choice != 4:
        print("1. Search for player")
        print("2. Search for team")
        print("3. Find max homeruns")
        print("4. Quit")

        choice = int(input("Enter a choice: "))
        if choice == 1:
            search_for_player(all_players)
        elif choice == 2:
            search_for_team(all_players)
        elif choice == 3:
            find_max_hrs(all_players)

def print_player(player):
    pass

def find_max_hrs(all_players):
    pass

def search_for_team(all_players):
    pass

def search_for_player(all_players):
    pass

main()

# STUDY CHALLENGES:
# Count the number of players who hit at least 30 home runs
# Print (only) the first three players who have the first name "Mike"
# Find and return the LAST player in the list with at least 5 HR

```

```
"Name","Team","G","AB","PA","H","1B","2B","3B","HR","R","RBI","BB","IBB","SO","HBP","SF","SH","GDP","SB","CS","AVG","playerid"
"Jesus Sucre","Mariners","9","25","29","12","9","2","0","1","4","5","2","0","5","2","0","0","1","0","0",".480","5942"
"Jordan Patterson","Rockies","10","18","19","8","7","1","0","0","1","2","1","0","1","0","0","0","0","0","1",".444","15119"
"Jose Martinez","Cardinals","12","16","18","7","6","1","0","0","4","1","2","0","1","0","0","0","0","0","0",".438","7996"
"Jacob Stallings","Pirates","5","15","15","6","5","1","0","0","0","2","0","0","4","0","0","0","0","1","0",".400","13723"
"Luke Weaver","Cardinals","9","13","13","5","5","0","0","0","1","0","0","0","4","0","0","0","0","0","0",".385","16918"
"Hunter Renfroe","Padres","11","35","36","13","6","3","0","4","8","14","1","1","5","0","0","0","1","0","0",".371","15464"
"Trey Mancini","Orioles","5","14","15","5","1","1","0","3","3","5","0","0","4","1","0","0","0","0","0",".357","15149"
"DJ LeMahieu","Rockies","146","552","635","192","141","32","8","11","104","66","66","2","80","3","6","8","19","11","7",".348","9874"
"Daniel Murphy","Nationals","142","531","582","184","107","47","5","25","88","104","35","10","57","8","8","0","4","5","3",".347","4316"

THERE ARE 700 MORE PLAYERS IN THIS FILE, WHICH YOU CAN FIND ON BeachBoard
DO NOT ACTUALLY USE THIS FILE, IT IS FOR DEMONSTRATION PURPOSES ONLY
```