# **Objects**

**Topics: Classes, Arrays, Functions, Nested Statements**

Write a simple banking program that allows a user to create accounts, list all accounts and their balances, deposit and withdraw money, and make payments to other accounts.

You must validate inputs. Do not assume the user will always input correct values.

You must have one object called Account.java.

| **Account.java** |
| --- |
| Account (String) |
| Account (String, double) |
| deposit (double) |
| getBalance() |
| withdraw (double) |
| getName() |

Your driver file must have at least two functions, displayMainMenu() and checkName(String).

Assume the user will not make more than 5 accounts.

**Expected Outcome:**

1. ~ ~ ~ Main Menu ~ ~ ~

1 - Create Account

2 - List Accounts and Balance

3 - Deposit

4 - Withdraw

5 - Make a Payment

6 - Exit

Please enter your choice: 8

Please enter your choice: Z

Please enter an integer: -6

Please enter your choice: 1

Enter account name: John Smith

Enter initial balance (0 for new account): 0

New account John Smith has been created.

~ ~ ~ Main Menu ~ ~ ~

1 - Create Account

2 - List Accounts and Balance

3 - Deposit

4 - Withdraw

5 - Make a Payment

6 - Exit

Please enter your choice: 2

John Smith - $0.00

~ ~ ~ Main Menu ~ ~ ~

1 - Create Account

2 - List Accounts and Balance

3 - Deposit

4 - Withdraw

5 - Make a Payment

6 - Exit

Please enter your choice: 5

Not enough accounts to make a payment.

~ ~ ~ Main Menu ~ ~ ~

1 - Create Account

2 - List Accounts and Balance

3 - Deposit

4 - Withdraw

5 - Make a Payment

6 - Exit

Please enter your choice: 1

Enter account name: 180

Enter initial balance: 38.53

New account 180 with balance $38.53 has been created.

~ ~ ~ Main Menu ~ ~ ~

1 - Create Account

2 - List Accounts and Balance

3 - Deposit

4 - Withdraw

5 - Make a Payment

6 - Exit

Please enter your choice: 2

John Smith - $0.00

180 - $38.53

~ ~ ~ Main Menu ~ ~ ~

1 - Create Account

2 - List Accounts and Balance

3 - Deposit

4 - Withdraw

5 - Make a Payment

6 - Exit

Please enter your choice: 3

Enter account name: Joe

Account not found.

~ ~ ~ Main Menu ~ ~ ~

1 - Create Account

2 - List Accounts and Balance

3 - Deposit

4 - Withdraw

5 - Make a Payment

6 - Exit

Please enter your choice: 3

Enter account name: John Smith

Enter amount to deposit: -12

Please enter a positive number: 12

$12.00 has been deposited. Your new balance is $12.00

~ ~ ~ Main Menu ~ ~ ~

1 - Create Account

2 - List Accounts and Balance

3 - Deposit

4 - Withdraw

5 - Make a Payment

6 - Exit

Please enter your choice: 4

Enter account name: 180

Enter amount to withdraw: 50

Cannot withdraw $50.00 from $38.53

~ ~ ~ Main Menu ~ ~ ~

1 - Create Account

2 - List Accounts and Balance

3 - Deposit

4 - Withdraw

5 - Make a Payment

6 - Exit

Please enter your choice: 4

Enter account name: 180

Enter amount to withdraw: 5

$5.00 has been withdrawn. Your new balance is $33.53

~ ~ ~ Main Menu ~ ~ ~

1 - Create Account

2 - List Accounts and Balance

3 - Deposit

4 - Withdraw

5 - Make a Payment

6 - Exit

Please enter your choice: 5

Enter account name to make payment from: John Smith

Enter account name to pay: 180

Enter amount to transfer: 10

Successfully deposited $10.00 to 180

~ ~ ~ Main Menu ~ ~ ~

1 - Create Account

2 - List Accounts and Balance

3 - Deposit

4 - Withdraw

5 - Make a Payment

6 - Exit

Please enter your choice: 6

Goodbye!

**Questions:**

1. **Write the overloaded constructor for the following to accept a string name, double gpa, and char grade.**

public Student (String name){

This.name = name;

}

1. **Given the following code, answer the questions below:**

Integer arr[] = new Integer[23];

arr[0] = 15;

arr[1] = 28;

arr[2] = 1;

1. **What will array.size() equal?**
2. **What will arr.length equal?**

1. **A**