

Lab 4 – Prescription History

v1

What do you need to know to do this lab?

Input, Output, complete Input Validation, Functions, Loops, Decisions and parallel and multi-dim Arrays

Requirements:

Use modules and functions as much as possible, but don't create 1-line modules or functions. Do not use ArrayLists.

Review the sample program execution shown below. Create a test plan showing possible input values. Then, design the program using pseudocode and only then write the program in java. Be sure to test ALL the conditions in your test plan.

There are many ways to create a program that works – the beautiful, the good, the bad, and the ugly. Full credit will only go to code that is formatted as expected in this class, and fully documented programs with comments explaining the purpose of the code, not just repeating what each line of code in comment form.

How the program will work:

For this assignment you are required to have multiple functions, if statements, more than 1 loop, and two arrays.

Here array names you should use - the global multi-dimensional array:

private static final String [] [] MEDICINE = { MED_1_NAME, MED_1_DESC }, { etc...

that contains the name of the medicine and the description. Use subscript 0 for the first medicine. The number of the medicine being displayed will be the subscript + 1. Where necessary, use the String library function **trim()** to remove the white space from strings.

Here is a local parallel array defined in main:

boolean [] medicinePrescribed

that will keep track of the medicine already prescribed. Use subscript 0 for the first medicine. True should mean the medicine has already been prescribed. When all the medicine is already prescribed, display a message and return to the main menu.

Lab Deliverables

This lab has 2 dates for deliverables:

First:

- A completed Test Plan with a list of constants to be used in the program

Second:

- A Java program (the .java file)

For examples of Java code, refer to the textbook *Java Programming to accompany Programming Logic and Design*.

Your Grading Decision

If you don't turn this in, or if you turn in the assignment and it doesn't work at an acceptable level, you will receive a zero on the assignment.

Verify your output looks almost EXACTLY like the sample output shown below.

Sample Output:

Welcome to your Animal's Prescription History

Menu Options:

1. Sign in as the Animal's doctor
2. Display the Animal's Prescription History
3. Prescribe Medicine
4. Reset Animal's Prescription History
5. Exit the program

Please enter a menu option:

33

Invalid entry. Try again.

Notice the title is in **RED**

Use a switch statement to get the user's menu input.

Basic integer input validation.
Use IR4.getString(...)

Welcome to your Animal's Prescription History

Menu Options:

1. Sign in as the Animal's doctor
2. Display the Animal's Prescription History
3. Prescribe Medicine
4. Reset Animal's Prescription History
5. Exit the program

Please enter a menu option:

3

Invalid entry. You must sign in first doctor.

The user must sign in before using any other menu items.

Welcome to your Animal's Prescription History

Menu Options:

1. Sign in as the Animal's doctor
2. Display the Animal's Prescription History
3. Prescribe Medicine
4. Reset Animal's Prescription History
5. Exit the program

Please enter a menu option:

1

What is your name, doctor?

Smith

Basic input validation for Strings.

Welcome to your Animal's Prescription History

Menu Options for Dr. Smith:

1. Sign in as the Animal's doctor
2. Display the Animal's Prescription History
3. Prescribe Medicine
4. Reset Animal's Prescription History
5. Exit the program

Notice the doctor's name
being displayed now.

Please enter a menu option:

1

What is your name, doctor?

Bob Smith

The user can change names.

Welcome to your Animal's Prescription History

Menu Options for Dr. Bob Smith:

1. Sign in as the Animal's doctor
2. Display the Animal's Prescription History
6. Prescribe Medicine
7. Reset Animal's Prescription History
3. Exit the program

Notice the name has changed.

Basic integer input validation.

Please enter a menu option:

2

Animal Prescription History

Medicine #1:	Abilify	an antipsychotic drug
Medicine #2:	Ambien	to treat insomnia
Medicine #3:	Amoxi	an antibiotic
Medicine #4:	Aspirin	a pain reliever
Medicine #5:	Crestor	a cholesterol-lowering statin drug
Medicine #6:	PlaceboTec	to treat hypochondriacs
Medicine #7:	Xanax	to treat anxiety disorders
Medicine #8:	Norvasc	a high blood pressure drug
Medicine #9:	Penicillin	an antibiotic
Medicine #10:	Plavix	a blood thinner
Medicine #11:	Prilosec	to treat reflux disease
Medicine #12:	Wellbe	an antidepressant
Medicine #13:	Nexim	an antacid drug
Medicine #14:	Zoloft	an antidepressant

Note the list starts at #1.
Use a loop to display all
the medicines.

All these medicine names and
descriptions MUST be global
constants in the MEDICINE array.

Note the descriptions all start in
the same column. Try using “\t”
to tab over...

Or check the length of the
medicine string and use the
String library function trim() to
trim spaces.

How will you solve this problem?

Welcome to your Animal's Prescription History

Menu Options for Dr. Bob Smith:

1. Sign in as the Animal's doctor
2. Display the Animal's Prescription History
3. Prescribe Medicine
4. Reset Animal's Prescription History
5. Exit the program

Please enter a menu option:

3

Please enter the medicine number you wish to prescribe (0 for menu):

55

Invalid entry. Try again.

Please enter the medicine number you wish to prescribe (0 for menu):

5

You have prescribed Crestor, a cholesterol-lowering statin drug.

Notice an invalid entry
here does not kick the user
out to the main menu.

Note the period at the end of
the sentence.

Welcome to your Animal's Prescription History

Menu Options for Dr. Bob Smith:

1. Sign in as the Animal's doctor
2. Display the Animal's Prescription History
3. Prescribe Medicine
4. Reset Animal's Prescription History
5. Exit the program

Please enter a menu option:

2

Animal Prescription History

Medicine #1:	Abilify	an antipsychotic drug
Medicine #2:	Ambien	to treat insomnia
Medicine #3:	Amoxi	an antibiotic
Medicine #4:	Aspirin	a pain reliever
Medicine #5:	Crestor	a cholesterol-lowering statin drug – already prescribed
Medicine #6:	PlaceboTec	to treat hypochondriacs
Medicine #7:	Xanax	to treat anxiety disorders
Medicine #8:	Norvasc	a high blood pressure drug
Medicine #9:	Penicillin	an antibiotic
Medicine #10:	Plavix	a blood thinner
Medicine #11:	Prilosec	to treat reflux disease
Medicine #12:	Wellbe	an antidepressant
Medicine #13:	Nexim	an antacid drug
Medicine #14:	Zoloft	an antidepressant

Note the report shows which medicine has already been prescribed.

Welcome to your Animal's Prescription History

Menu Options for Dr. Bob Smith:

1. Sign in as the Animal's doctor
2. Display the Animal's Prescription History
3. Prescribe Medicine
4. Reset Animal's Prescription History
5. Exit the program

Please enter a menu option:

3

Please enter the medicine number you wish to prescribe (0 for menu):

5

You have already prescribed Crestor, a cholesterol-lowering statin drug.

Please enter the medicine number you wish to prescribe (0 for menu):

0

Note the message saying the doctor has **already** prescribed this medicine.

What will the program do when ALL the medicine has been prescribed?

Welcome to your Animal's Prescription History

Menu Options for Dr. Bob Smith:

1. Sign in as the Animal's doctor
2. Display the Animal's Prescription History
3. Prescribe Medicine
4. Reset Animal's Prescription History
5. Exit the program

Please enter a menu option:

4

Are you sure you want to reset the Animal's prescription history? (Y/N)

Y

Note the message asking for confirmation. If the answer is no, return to the main menu.

The Animal's prescription history has been reset.

Welcome to your Animal's Prescription History

Menu Options for Dr. Bob Smith:

1. Sign in as the Animal's doctor
2. Display the Animal's Prescription History
3. Prescribe Medicine
4. Reset Animal's Prescription History
5. Exit the program

Please enter a menu option:

2

Animal Prescription History

Medicine #1:	Abilify	an antipsychotic drug
Medicine #2:	Ambien	to treat insomnia
Medicine #3:	Amoxi	an antibiotic
Medicine #4:	Aspirin	a pain reliever
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Medicine #8:	Norvasc	a high blood pressure drug
Medicine #9:	Penicillin	an antibiotic
Medicine #10:	Plavix	a blood thinner
Medicine #11:	Prilosec	to treat reflux disease
Medicine #12:	Wellbe	an antidepressant
Medicine #13:	Nexim	an antacid drug
Medicine #14:	Zoloft	an antidepressant

Note the report shows that all the medicines prescribed has been reset.

Welcome to your Animal's Prescription History

Menu Options for Dr. Bob Smith:

6. Sign in as the Animal's doctor
7. Display the Animal's Prescription History
8. Prescribe Medicine
9. Reset Animal's Prescription History
10. Exit the program

Please enter a menu option:

5

Signing out Dr. Bob Smith.

----- Program Terminating -----

Note the period at the end of the "Signing out" sentence.