

Menu Driven Apps

Loops, menus and the switch statement

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Topics list

- A simple menu using switch.
- ShopV3.0 – adding a menu.

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- A simple menu using switch.
- ShopV3.0 – adding a menu.

Now loop on the switch statement

```
public Driver(){  
    runMenu();  
}
```

```
private void runMenu(){  
    int choice;  
    System.out.println("Choose a number between 1 and 3, 0 to exit: ");  
    choice = input.nextInt();  
  
    while (choice != 0){  
        switch (choice) {  
            case 1 -> System.out.println("You chose 1.");  
            case| 2 -> System.out.println("You chose 2.");  
            case 3 -> System.out.println("You chose 3.");  
            default -> System.out.println("Invalid option entered");  
        }  
  
        System.out.println("Choose a number between 1 and 3, 0 to exit: ");  
        choice = input.nextInt();  
    }  
}
```

Note the use of the Loop Control Variable, **option**.

This gives the following output

```
private void runMenu(){
    int choice;
    System.out.println("Choose a number between 1 and 3, 0 to exit: ");
    choice = input.nextInt();

    while (choice != 0){
        switch (choice) {
            case 1 -> System.out.println("You chose 1.");
            case 2 -> System.out.println("You chose 2.");
            case 3 -> System.out.println("You chose 3.");
            default -> System.out.println("Invalid option entered");
        }

        System.out.println("Choose a number between 1 and 3, 0 to exit: ");
        choice = input.nextInt();
    }
}
```

```
Driver driver1 = new Driver();
Choose a number between 1 and 3, 0 to exit:
2
You chose 2.
Choose a number between 1 and 3, 0 to exit:
3
You chose 3.
Choose a number between 1 and 3, 0 to exit:
4
Invalid option entered
Choose a number between 1 and 3, 0 to exit:
0
Thanks and goodbye
```

If you wanted more than one line of code associated with a case, just declare a code block:

```
private void runMenu(){
    int choice;
    System.out.println("Choose a number between 1 and 3, 0 to exit: ");
    choice = input.nextInt();

    while (choice != 0){
        switch (choice) {
            case 1 -> {
                System.out.println("You chose 1.");
                System.out.println("You chose one."); | 
                }
            case 2 -> System.out.println("You chose 2.");
            case 3 -> System.out.println("You chose 3.");
            default -> System.out.println("Invalid option entered");
        }

        System.out.println("Choose a number between 1 and 3, 0 to exit: ");
        choice = input.nextInt();

    }
    System.out.println("Thanks and goodbye");
}
```

If you wanted more than one line of code associated with a case, just declare a code block:

```
private void runMenu(){
    int choice;
    System.out.println("Choose a number between 1 and 3, 0 to exit: ");
    choice = input.nextInt();

    while (choice != 0){
        switch (choice) {
            case 1 -> {
                System.out.println("You chose 1.");
                System.out.println("You chose one.");
            }
            case 2 -> System.out.println("You chose 2.");
            case 3 -> System.out.println("You chose 3.");
            default -> System.out.println("Invalid option entered");
        }

        System.out.println("Choose a number between 1 and 3, 0 to exit: ");
        choice = input.nextInt();
    }

    System.out.println("Thanks and goodbye");
}
```

Driver driver1 = new Driver();
Choose a number between 1 and 3, 0 to exit:
1
You chose 1.
You chose one.
Choose a number between 1 and 3, 0 to exit:

Topics list

- A simple menu using switch.
- ShopV3.0 – adding a menu.

Adding a basic menu to Shop...

Shop Menu

-
- 1) Add a product
 - 2) List the products

 - 3) List the current products
 - 4) Display average product unit cost
 - 5) Display cheapest product
 - 6) List products that are more expensive than a given price

 - 0) Exit
- ===>>

More on print

- We have a new way to print to console in a formatted way

```
private void printMenu(){  
    System.out.println("""  
        This is a new way of writing  
        many lines in a particular  
        format""");  
}
```



```
Driver driver1 = new Driver();  
This is a new way of writing  
many lines in a particular  
format
```

We are using **Raw Strings** (the triple double quotes) to format the output for the menu.

Menu to be displayed...

Driver Class

```
private int mainMenu(){  
    System.out.print(""  
    Shop Menu  
    -----  
    1) Add a product  
    2) List the products  
    -----  
    3) List the current products  
    4) Display average product unit cost  
    5) Display cheapest product  
    6) List products that are more expensive than a given price  
    -----  
    0) Exit  
    ===>> "");  
    int option = input.nextInt();  
    return option;  
}
```

Shop Menu

- 1) Add a product
- 2) List the products

- 3) List the current products
- 4) Display average product unit cost
- 5) Display cheapest product
- 6) List products that are more expensive than a given price

- 0) Exit

===>>

Handling the menu input...

```
private void runMenu(){
    int option = mainMenu();

    while (option != 0){

        switch (option){
            case 1 -> addProduct();
            case 2 -> printProducts();
            case 3 -> printCurrentProducts();
            case 4 -> printAverageProductPrice();
            case 5 -> printCheapestProduct();
            case 6 -> printProductsAboveAPrice();
            default -> System.out.println("Invalid option entered: " + option);
        }

        //pause the program so that the user can read what we just printed to the terminal window
        ScannerInput.readNextLine(prompt: "\nPress enter key to continue...");

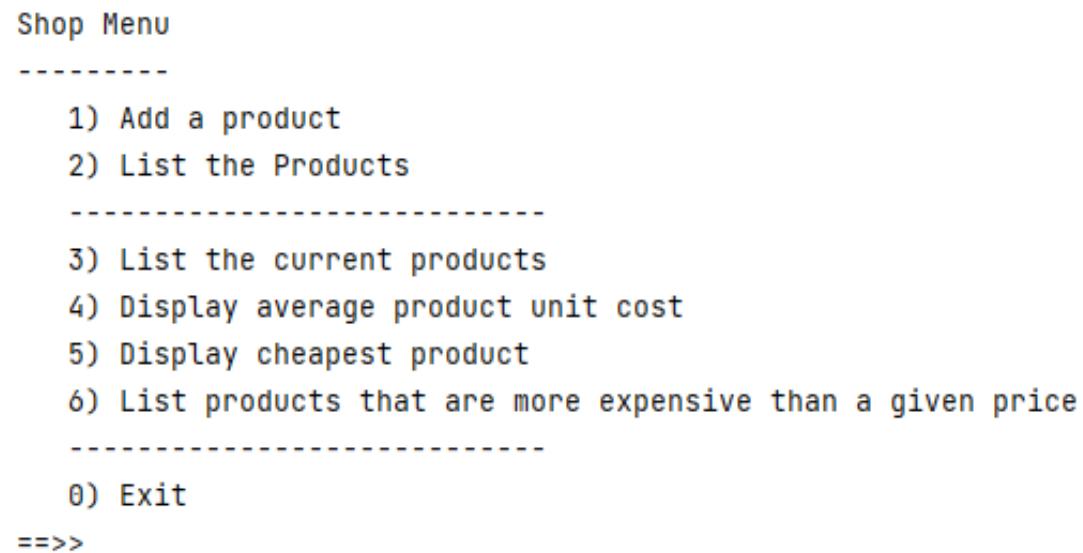
        //display the main menu again
        option = mainMenu();
    }
}
```

Driver Class

Calling the menu on startup...

```
public class Driver{  
  
    private Store store = new Store();  
  
    public static void main(String[] args) {  
        new Driver();  
    }  
  
    public Driver() {  
        runMenu();  
    }  
}
```

Driver Class



NOTE: A simple menu using the **older** format of the switch statement

```
public void run()
{
    System.out.println("Choose a number between 1 and 3");
    int choice = input.nextInt();

    switch(choice)
    {
        case 1:
            System.out.println("You chose 1");
            break;
        case 2:
            System.out.println("You chose 2");
            break;
        case 3:
            System.out.println("You chose 3");
            break;
        default:
            System.out.println("You chose an invalid number");
            break;
    }
}
```

A **break** statement is needed after each case, otherwise execution “falls” into the next statement regardless.

Questions?

