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April 8, 2023

## ICE 9 – Ice Cream V2

### Part 2 – Initial Screen



```
Ice Cream Shop V2 - Kuldeep X + v

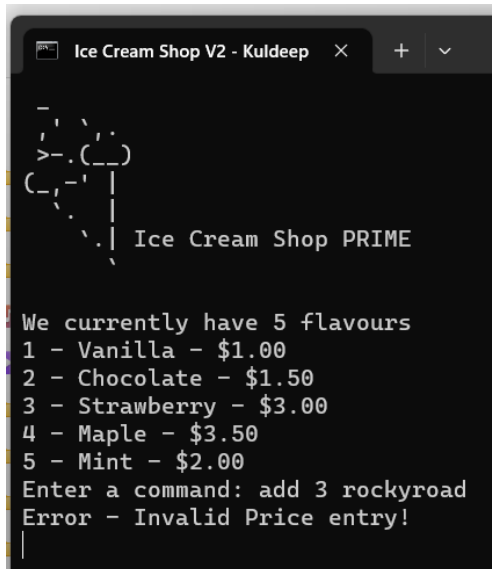
  _
 / \
>-.(_ _)
(_-_'|
  \  |
   \ | Ice Cream Shop PRIME
    \|

We currently have 5 flavours
1 - Vanilla - $1.00
2 - Chocolate - $1.50
3 - Strawberry - $3.00
4 - Maple - $3.50
5 - Mint - $2.00
Enter a command: |
```

Screenshot 1

Context: Initial Screen when the application opens. It displays to the user the opening banner of “Ice Cream Shop V2” as well as a menu that shows the current flavours that are available to the user. The last line also appears prompting the user for input on what they would like to do next.

## Part 3 – Input Screen and Validation



```
Ice Cream Shop V2 - Kuldeep x + v
-
/ \
>-. ( )
( - ' |
 \   |
  \  | Ice Cream Shop PRIME
   \ |
    \|

We currently have 5 flavours
1 - Vanilla - $1.00
2 - Chocolate - $1.50
3 - Strawberry - $3.00
4 - Maple - $3.50
5 - Mint - $2.00
Enter a command: add 3 rockyroad
Error - Invalid Price entry!
```

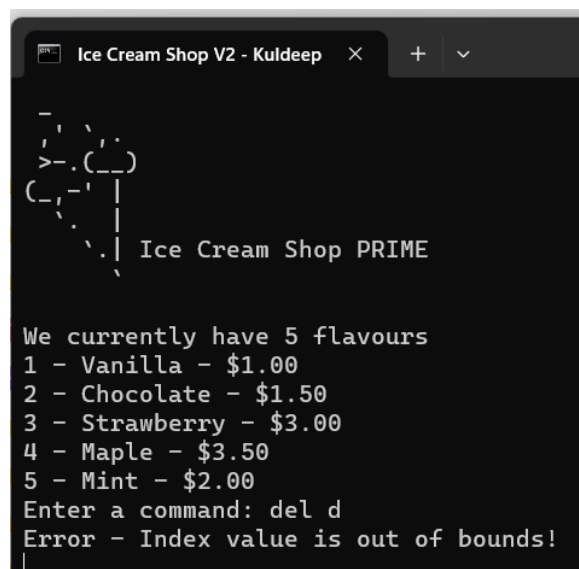


```
Ice Cream Shop V2 - Kuldeep x + v
-
/ \
>-. ( )
( - ' |
 \   |
  \  | Ice Cream Shop PRIME
   \ |
    \|

We currently have 5 flavours
1 - Vanilla - $1.00
2 - Chocolate - $1.50
3 - Strawberry - $3.00
4 - Maple - $3.50
5 - Mint - $2.00
Enter a command: |
```

**Screenshot 2 (Invalid User entry + Next prompt with refreshed and cleared error display)**

**Context:** User had entered the add command with incorrectly inputted parameters (values were appropriate but not with the correct order they are to be inputted – “flavour name”, “price” – hence the app refreshed the menu display and prompted the user again what they would like to do



```
Ice Cream Shop V2 - Kuldeep x + v
-
/ \
>-. ( )
( - ' |
 \   |
  \  | Ice Cream Shop PRIME
   \ |
    \|

We currently have 5 flavours
1 - Vanilla - $1.00
2 - Chocolate - $1.50
3 - Strawberry - $3.00
4 - Maple - $3.50
5 - Mint - $2.00
Enter a command: del d
Error - Index value is out of bounds!
```

**Screenshot 3 – Delete command.**

**Context:** User had entered an incorrect input value for the delete command and was given an error message

```
-
' \
'-.('..
>-.(_-_)
(-_-'|
   \. |
     \.| Ice Cream Shop PRIME
```

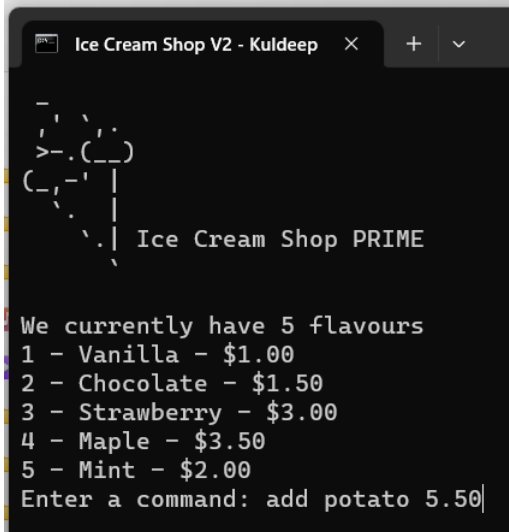
We currently have 5 flavours

- 1 - Vanilla - \$1.00
- 2 - Chocolate - \$1.50
- 3 - Strawberry - \$3.00
- 4 - Maple - \$3.50
- 5 - Mint - \$2.00

Enter a command: sort rating  
Error - Invalid Sorting!

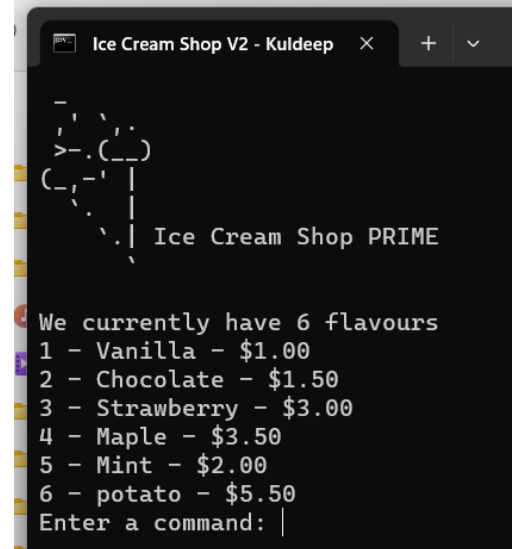
### Screenshot 4 – Sort command

**Context:** User tried to ask for a sorting method that was not available as one of the pre-defined choices – “name” or “price”.



```
Ice Cream Shop V2 - Kuldeep x + v
-
>-. ( )
( - - |
  \ . | Ice Cream Shop PRIME
-

We currently have 5 flavours
1 - Vanilla - $1.00
2 - Chocolate - $1.50
3 - Strawberry - $3.00
4 - Maple - $3.50
5 - Mint - $2.00
Enter a command: add potato 5.50|
```

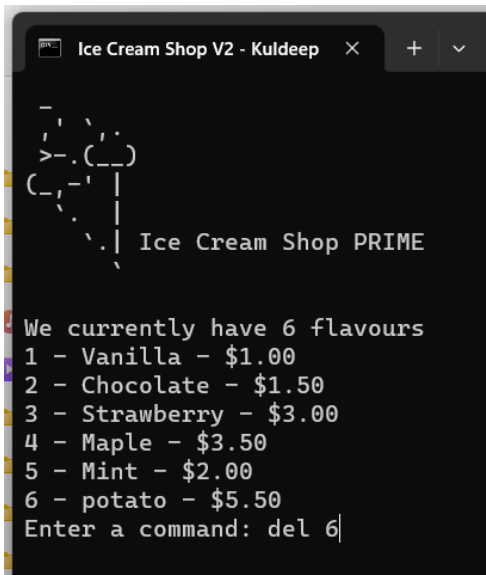


```
Ice Cream Shop V2 - Kuldeep x + v
-
>-. ( )
( - - |
  \ . | Ice Cream Shop PRIME
-

We currently have 6 flavours
1 - Vanilla - $1.00
2 - Chocolate - $1.50
3 - Strawberry - $3.00
4 - Maple - $3.50
5 - Mint - $2.00
6 - potato - $5.50
Enter a command: |
```

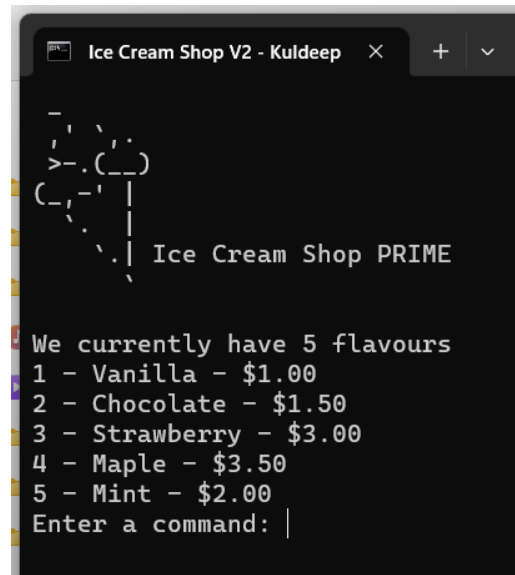
**Screenshot 5 – Successful Add command**

Context: User had inputted the correct parameter (and corresponding) order for the add command to implement a new flavour, the menu refreshed with the addition of a new flavour as previously inputted.



```
Ice Cream Shop V2 - Kuldeep x + v
-
>-. ( )
( - - |
  \ . | Ice Cream Shop PRIME
-

We currently have 6 flavours
1 - Vanilla - $1.00
2 - Chocolate - $1.50
3 - Strawberry - $3.00
4 - Maple - $3.50
5 - Mint - $2.00
6 - potato - $5.50
Enter a command: del 6|
```



```
Ice Cream Shop V2 - Kuldeep x + v
-
>-. ( )
( - - |
  \ . | Ice Cream Shop PRIME
-

We currently have 5 flavours
1 - Vanilla - $1.00
2 - Chocolate - $1.50
3 - Strawberry - $3.00
4 - Maple - $3.50
5 - Mint - $2.00
Enter a command: |
```

**Screenshot 6 – Successful delete command**

Context: User had successfully entered a valid index value ("6") to delete from the listed options, the menu had refreshed to incorporate the new changes.

```
-
 \
  >-. ( )
 ( - -' |
  \    | Ice Cream Shop PRIME
   \   |

We currently have 5 flavours
1 - Vanilla - $1.00
2 - Chocolate - $1.50
3 - Strawberry - $3.00
4 - Maple - $3.50
5 - Mint - $2.00
Enter a command: sort name|
```

```
-
 \
  >-. ( )
 ( - -' |
  \    | Ice Cream Shop PRIME
   \   |

We currently have 5 flavours
1 - Chocolate - $1.50
2 - Maple - $3.50
3 - Mint - $2.00
4 - Strawberry - $3.00
5 - Vanilla - $1.00
Enter a command: |
```

**Screenshot 7 – Successful Sort Name command**

Context: User had successfully chosen to sort the list by name. The menu previously was unsorted but after entry, the menu order has clearly changed to be organized from A-Z.

```
-
 \
  >-. ( )
 ( - -' |
  \    | Ice Cream Shop PRIME
   \   |

We currently have 5 flavours
1 - Maple - $3.50
2 - Strawberry - $3.00
3 - Mint - $2.00
4 - Chocolate - $1.50
5 - Vanilla - $1.00
Enter a command: sort price|
```

```
-
 \
  >-. ( )
 ( - -' |
  \    | Ice Cream Shop PRIME
   \   |

We currently have 5 flavours
1 - Maple - $3.50
2 - Strawberry - $3.00
3 - Mint - $2.00
4 - Chocolate - $1.50
5 - Vanilla - $1.00
Enter a command: |
```

**Screenshot 8 – Successful Sort Price Command**

Context: User had successfully entered a sort by price command. The menu previously was unsorted but after entry, the menu order has clearly changed to be organized with price from descending order.

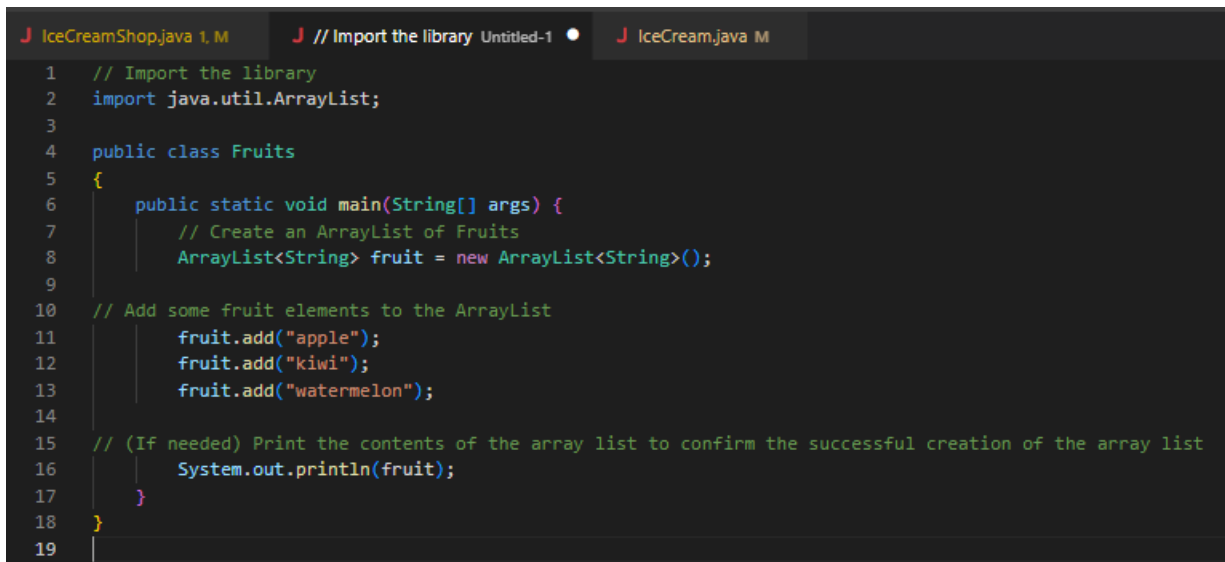
## Part 5 – Answering Questions

### Question 1. Explain 2 main differences between arrays and ArrayList in Java

The most significant differences between arrays and array lists in Java come down to an array's fundamental specifications and restrictions. With arrays, they are of a set-defined size of memory which is determined when the array is declared/created. On the other hand, ArrayList is a dynamic memory size whose size can be manipulated.

The second notable difference between an ArrayList and an array is that an ArrayList can contain unrestricted elements of varying data types (i.e. strings, ints, etc.). While an array is restricted to only holding what it was defined to hold (i.e. doubles, strings, etc.)

### Question 2. Show a code example declaring arrayList of Strings named fruit in Java?

A screenshot of the Visual Studio Code editor interface. The top bar shows three tabs: 'IceCreamShop.java 1. M', '// Import the library Untitled-1', and 'IceCream.java M'. The main editor area displays Java code for a class named 'Fruits'. The code includes an import statement for 'java.util.ArrayList', a public class declaration, and a main method. Inside the main method, an ArrayList of Strings named 'fruit' is created and populated with 'apple', 'kiwi', and 'watermelon'. A comment indicates that the contents of the array list are printed to confirm successful creation.

```
1 // Import the library
2 import java.util.ArrayList;
3
4 public class Fruits
5 {
6     public static void main(String[] args) {
7         // Create an ArrayList of Fruits
8         ArrayList<String> fruit = new ArrayList<String>();
9
10        // Add some fruit elements to the ArrayList
11        fruit.add("apple");
12        fruit.add("kiwi");
13        fruit.add("watermelon");
14
15        // (If needed) Print the contents of the array list to confirm the successful creation of the array list
16        System.out.println(fruit);
17    }
18 }
19
```

Code example written in VS Code for Fruits