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Module Name: Software Development (HDSDEV JAN24)
Week 6 Lab Submission
Question 3 and then 2

File - /Users/seanwelch/programming/labs/Week6Lab/src/cinema/MovieSelection.java

```
1 package cinema;
2
3 import java.util.Scanner;
4
5 public class MovieSelection {
6     private final Scanner scanner;
7
8     public enum MovieOptions { DRAMA, COMEDY, ACTION }
9
10    public MovieSelection(Scanner scanner) {
11        this.scanner = scanner;
12    }
13
14    public void chooseMovieOption(){
15        System.out.println("Please choose what film you would like to see:");
16        for (MovieOptions options : MovieOptions.values()) {
17            System.out.println(options.name());
18        }
19
20        boolean isMovieAvailable = false;
21        while (!isMovieAvailable) {
22            try {
23                String input = scanner.nextLine().toUpperCase();
24
25                MovieOptions.valueOf(input);
26                isMovieAvailable = true;
27            } catch (IllegalArgumentException err) {
28                System.out.println("That's not available! The options are:");
29                for (MovieOptions options : MovieOptions.values()) {
30                    System.out.println(options.name());
31                }
32            }
33        }
34    }
35 }
36
```

```

1 package cinema;
2 import java.util.ArrayList;
3 import java.util.List;
4 import java.util.Scanner;
5
6 import static java.lang.System.out;
7
8 public class ConcessionSelection {
9     private final Scanner scanner;
10
11     public enum SodaOptions { COKE, SPRITE, PEPSI, FANTA }
12
13     public ConcessionSelection(Scanner scanner) {
14         this.scanner = scanner;
15     }
16
17     private List<String> chooseSodaType() {
18         out.println("Please choose which soda(s) you would like");
19         for (SodaOptions option : SodaOptions.values()) {
20             out.println(option.name());
21         }
22
23         List<String> chosenSodas = new ArrayList<>();
24
25         while (true) {
26             try {
27                 String inputLine = scanner.nextLine();
28                 String[] sodas = inputLine.split("[,\\s]+");
29
30                 boolean validChoice = true;
31                 for (String soda: sodas) {
32                     try {
33                         SodaOptions.valueOf(soda.toUpperCase());
34                         chosenSodas.add(soda);
35                     } catch (IllegalArgumentException err) {
36                         out.println(soda + " is not served here!");
37                         validChoice = false;
38                     }
39                 }
40
41                 if (validChoice) {
42                     return chosenSodas;
43                 } else {
44                     out.println("Please choose from the available options:");
45                     for (SodaOptions option : SodaOptions.values()) {
46                         out.println(option.name());
47                     }
48                 }
49             } catch (IllegalArgumentException err) {
50                 out.println("We don't serve that here. We only have: coke, sprite, pepsi, fanta.");
51             }
52         }
53     }
54
55     public int choosePopcorn() {
56         out.println("Would you like to buy some popcorn? (y/n)");
57
58         while (true) {
59             try {
60                 String input = scanner.nextLine().toLowerCase();
61                 if (input.equals("y") || input.equals("yes")) {
62                     out.println("How many portions of popcorn would you like?: ");
63                     if (scanner.hasNextInt()) {
64                         int quantity = scanner.nextInt();
65                         scanner.nextLine();
66                         return quantity;
67                     } else {
68                         out.println("Excuse me, can you tell me that again");
69                     }
70                 }
71             }
72         }
73     }
74 }

```

```
69         scanner.nextLine();
70     }
71     } else if (input.equals("n") || input.equals("no")) {
72         return 0;
73     } else {
74         out.println("Please just tell me y or n :/");
75     }
76 } catch (IllegalArgumentException err) {
77     out.println("Please just tell me y or n :/");
78 }
79 }
80 }
81
82 public int chooseSodaQuantity() {
83     out.println("Would you like to purchase a soda? (y/n)");
84
85     int totalQuantity = 0;
86     while (true) {
87         try {
88             String input = scanner.nextLine().toLowerCase();
89             if (input.equals("y") || input.equals("yes")) {
90                 List<String> sodas = this.chooseSodaType();
91
92                 for (String soda: sodas) {
93                     out.println("How many " + soda + "s" + " would you like?");
94                     int quantity = scanner.nextInt();
95                     totalQuantity += quantity;
96                 }
97
98                 return totalQuantity;
99             } else if (input.equals("n") || input.equals("no")) {
100                 return 0;
101             } else {
102                 out.println("Please just tell me y or n :/");
103             }
104         } catch (IllegalArgumentException err) {
105             out.println("That's not okay, try again!");
106         }
107     }
108 }
109 }
110
```

File - /Users/seanwelch/programming/labs/Week6Lab/src/cinema/OrderCalculator.java

```
1 package cinema;
2
3 import java.util.Scanner;
4
5 public class OrderCalculator {
6     private final Scanner scanner;
7     private final MovieSelection movieSelection;
8     private final ConcessionSelection concessionSelection;
9
10    public OrderCalculator(Scanner scanner, MovieSelection movieSelection, ConcessionSelection concessionSelection) {
11        this.scanner = scanner;
12        this.movieSelection = movieSelection;
13        this.concessionSelection = concessionSelection;
14    }
15
16    public double calculateTotalPrice() {
17        double totalPrice = 9.99;
18
19        movieSelection.chooseMovieOption();
20        try {
21            System.out.println("How many tickets would you like?:");
22            int input = scanner.nextInt();
23            totalPrice *= input;
24            scanner.nextLine();
25        } catch (IllegalArgumentException err) {
26            System.out.println("Give me a valid number please");
27        }
28
29        double popcornPrice = 4.99;
30        int popcornQuantity = concessionSelection.choosePopcorn();
31        totalPrice += (popcornPrice * popcornQuantity);
32
33        double sodaPrice = 3.99;
34        int sodaQuantity = concessionSelection.chooseSodaQuantity();
35        totalPrice += (sodaPrice * sodaQuantity);
36
37        return totalPrice;
38    }
39 }
40
```

File - /Users/seanwelch/programming/labs/Week6Lab/src/cinema/CinemaApp.java

```
1 package cinema;
2
3 import java.util.InputMismatchException;
4 import java.util.Scanner;
5
6 import static java.lang.System.*;
7
8 public class CinemaApp {
9     public static void main(String[] args) {
10         try (Scanner scanner = new Scanner(in)) {
11             out.println("Hi! Welcome to the really old and expensive movie theater. Let's get your order started.");
12
13             MovieSelection movieSelection = new MovieSelection(scanner);
14             ConcessionSelection concessionSelection = new ConcessionSelection(scanner);
15
16             OrderCalculator orderCalculator = new OrderCalculator(scanner, movieSelection, concessionSelection);
17             double orderTotal = orderCalculator.calculateTotalPrice();
18
19             out.println("Your order total comes to: €" + orderTotal);
20         } catch (InputMismatchException err) {
21             out.println("That's not how you order");
22         }
23     }
24 }
```

```
1 package grades;
2
3 import java.util.ArrayList;
4 import java.util.List;
5 import java.util.Scanner;
6
7 import static java.lang.System.out;
8
9 public class SubjectList {
10     private final Scanner scanner;
11
12     public enum SubjectOptions{
13         MATH, PHYSICS, BIOLOGY, HISTORY, RELIGION, PROGRAMMING, ACCOUNTING, FINANCE
14     }
15
16     public SubjectList(Scanner scanner) { this.scanner = scanner; }
17
18     public List<String> chooseSubjectOptions(){
19         out.println("What Subjects do you take? Please give them to me in a list :)");
20         for (SubjectOptions subjectOptions : SubjectOptions.values()) {
21             out.println(subjectOptions.name());
22         }
23
24         List<String> chosenSubjects = new ArrayList<>();
25
26         while (true) {
27             try {
28                 String inputLine = scanner.nextLine();
29                 String[] subjects = inputLine.split("[,\\s]+");
30
31                 for (String subject : subjects) {
32                     try {
33                         SubjectOptions.valueOf(subject.toUpperCase());
34                         chosenSubjects.add(subject);
35                     } catch (IllegalArgumentException err) {
36                         out.println(subject + " is not a valid subject, try again!");
37                     }
38                 }
39             }
40
41             if (this.confirmSubjectChoice(chosenSubjects)) {
42                 out.println("Subject choices confirmed!");
43                 break;
44             } else {
45                 out.println("Subjects not confirmed. Please try again.");
46             }
47         } catch (IllegalArgumentException err) {
48             out.println("Some of those subjects are unavailable! Please try again :)");
49             for (SubjectOptions subjectOptions : SubjectOptions.values()) {
50                 out.println(subjectOptions.name());
51             }
52         }
53     }
54
55     return chosenSubjects;
56 }
57
58 private boolean confirmSubjectChoice(List<String> chosenSubjects) {
59     out.println("Chosen subjects: " + chosenSubjects + "." + "Is this list correct? (y/n)");
60
61     while (true) {
62         String input = scanner.nextLine().toLowerCase();
63         if (input.equals("y") || input.equals("yes")) {
64             return true;
65         } else if (input.equals("n") || input.equals("no")) {
66             return false;
67         } else {
68             out.println("Input is not valid. Please confirm (y/n)!");
69         }
70     }
71 }
```

File - /Users/seanwelch/programming/labs/Week6Lab/src/grades/SubjectList.java

```
69         }  
70     }  
71 }  
72 }  
73
```

File - /Users/seanwelch/programming/labs/Week6Lab/src/grades/GradesCalculator.java

```
1 package grades;
2
3 import java.util.List;
4 import java.util.Scanner;
5
6 import static java.lang.System.out;
7
8 public class GradesCalculator {
9     private final Scanner scanner;
10    private final SubjectList subjectList;
11
12    public GradesCalculator(Scanner scanner, SubjectList subjectList) {
13        this.scanner = scanner;
14        this.subjectList = subjectList;
15    }
16
17    public int getAverageGrades() {
18        int totalGrades = 0;
19        List<String> chosenSubjects = subjectList.chooseSubjectOptions();
20
21        for (String subject: chosenSubjects) {
22            while (true) {
23                out.println("What grade did you get in " + subject + "? (0-100):");
24                int grade = scanner.nextInt();
25                scanner.nextLine();
26
27                if (grade >= 0 && grade <= 100) {
28                    totalGrades += grade;
29                    break;
30                } else {
31                    out.println("Please enter a valid grade between 0 and 100.");
32                }
33            }
34        }
35
36        return totalGrades / chosenSubjects.size();
37    }
38 }
39
```


File - /Users/seanwelch/programming/labs/Week6Lab/src/grades/GradesApp.java

```
1 package grades;
2
3 import java.util.InputMismatchException;
4 import java.util.Scanner;
5
6 import static java.lang.System.in;
7 import static java.lang.System.out;
8
9 public class GradesApp {
10     public static void main(String[] args) {
11         try (Scanner scanner = new Scanner(in)) {
12             out.println("Welcome to the principals office. " +
13                 "Let's look at your graded to see whether or not you're suspended!");
14
15             SubjectList subjectList = new SubjectList(scanner);
16             GradesCalculator gradesCalculator = new GradesCalculator(scanner, subjectList);
17
18             int averageGrade = gradesCalculator.getAverageGrades();
19
20             if (averageGrade < 40) {
21                 out.println("Unfortunately, your average grade is below 40. " + averageGrade + " is an F. " +
22                     "This means you're expelled.");
23             } else if (averageGrade < 60) {
24                 out.println("Your average grade is below 60. " + averageGrade + " is a D. " +
25                     "Improve it soon or you're dust.");
26             } else if (averageGrade < 80) {
27                 out.println("Your average grade is satisfactory, " + averageGrade + "is a B. " +
28                     "but there's room for improvement.");
29             } else {
30                 out.println("Congratulations! Your average grade is excellent. " + averageGrade + " is an A." +
31                     "I'm making you the class representative!");
32             }
33         } catch (InputMismatchException err) {
34             out.println("An input error was made along the way. Try again!");
35         }
36     }
37 }
38
```