

# CollegeCourse.java

```
1  /** Application Purpose: This is the class for a College Course.
2  *
3  * Author: Alex Dorodko
4  * Date: 11/NOV/2020
5  * Time: 11:58 PM
6  */
7  public class CollegeCourse
8  {
9
10     //State
11     private int courseReference;
12     private int courseNumber;
13
14     //Default constructor
15     public CollegeCourse()
16     {
17     }
18
19     //Main constructor
20     public CollegeCourse( int courseReference, int courseNumber)
21     {
22         this.courseReference = courseReference;
23         this.courseNumber = courseNumber;
24     }
25
26     //The setters
27     public void setCourseReference(int courseReference)
28     {
29         this.courseReference = courseReference;
30     }
31
32     public void setCourseNumber(int courseNumber)
33     {
34         this.courseNumber = courseNumber;
35     }
36
37     //The getters
38     public int getCourseReference()
39     {
40         return courseReference;
41     }
42
43     public int getCourseNumber()
44     {
45         return courseNumber;
46     }
47 }
48
49
```

# 'CollegeCourseTestHarness.java

## Part 1

```
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CollegeCourseTestHarness.java - Programming Fundamentals - Visual Studio Code

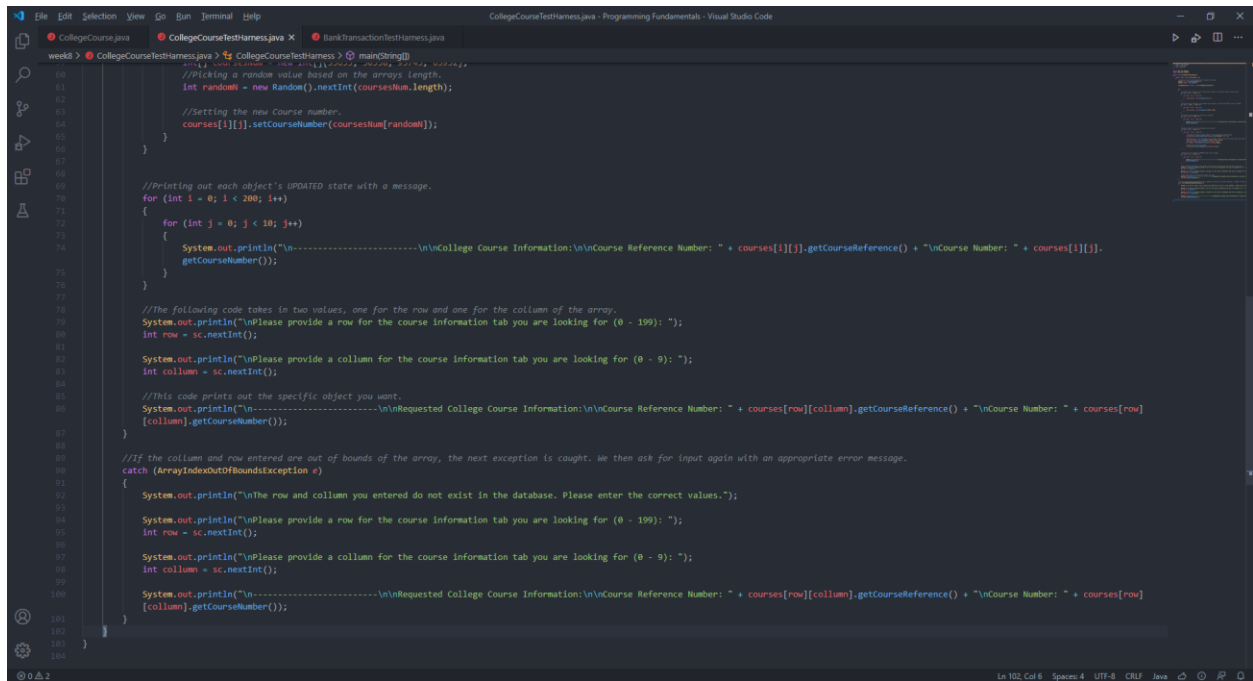
week8 > CollegeCourseTestHarness.java > ...
1 /** Application Purpose: This is the test harness for the college course program, which prints out the records and writes them down.
2 * Author: Alex Dorodko
3 * Date: 11/NOV/2020
4 * Time: 01:28 AM
5 */
6
7 import java.util.Random;
8 import java.util.Scanner;
9
10 public class CollegeCourseTestHarness
11 {
12     Run (Debug)
13     public static void main(String[] args)
14     {
15         //Creating the array and initiating the scanner and random.
16         Scanner sc = new Scanner(System.in);
17         Random random = new Random();
18
19         CollegeCourse[][] courses = new CollegeCourse[200][10];
20
21
22         try
23         {
24             //filling the 1st 100 rows with college course objects in which the default values are 0s
25             for (int i = 0; i < 100; i++)
26             {
27                 for (int j = 0; j < 10; j++)
28                 {
29                     courses[i][j] = new CollegeCourse(0, 0);
30                 }
31             }
32
33             //filling the last 100 rows with college course objects in which the default values are 9999
34             for (int i = 100; i < 200; i++)
35             {
36                 for (int j = 0; j < 10; j++)
37                 {
38                     courses[i][j] = new CollegeCourse(9999, 9999);
39                 }
40             }
41
42             //Printing out each object's state with a message.
43             for (int i = 0; i < 200; i++)
44             {
45                 for (int j = 0; j < 10; j++)
46                 {
47                     System.out.println("\n-----\n\nCollege Course Information:\n\nCourse Reference Number: " + courses[i][j].getCourseReference() + "\nCourse Number: " + courses[i][j].getCourseNumber());
48                 }
49             }
50         }
51     }
52 }
```

## Part 2

```
File Edit Selection View Go Run Terminal Help
CollegeCourseTestHarness.java - Programming Fundamentals - Visual Studio Code

week8 > CollegeCourseTestHarness.java > CollegeCourseTestHarness > main(String[])
48
49 //Printing out each object's state with a message.
50 for (int i = 0; i < 200; i++)
51 {
52     for (int j = 0; j < 10; j++)
53     {
54         System.out.println("\n-----\n\nCollege Course Information:\n\nCourse Reference Number: " + courses[i][j].getCourseReference() + "\nCourse Number: " + courses[i][j].getCourseNumber());
55     }
56 }
57
58 //Going through the array and setting the new values.
59 for (int i = 0; i < 200; i++)
60 {
61     for (int j = 0; j < 10; j++)
62     {
63         //Creating the unique 7 digit number for each object using math.random.
64         courses[i][j].setCourseReference(random.nextInt(9999999 - 0) + 0);
65
66         //Choosing one of the 4 possible course numbers from an array and choosing them. Upon some research online, I found the following solution.
67         int[] coursesum = new int[] {53635, 30930, 95043, 65932};
68         //Picking a random value based on the arrays length.
69         int random = new Random().nextInt(coursesum.length);
70
71         //Setting the new Course number.
72         courses[i][j].setCourseNumber(coursesum[random]);
73     }
74 }
75
76 //Printing out each object's UPDATED state with a message.
77 for (int i = 0; i < 200; i++)
78 {
79     for (int j = 0; j < 10; j++)
80     {
81         System.out.println("\n-----\n\nCollege Course Information:\n\nCourse Reference Number: " + courses[i][j].getCourseReference() + "\nCourse Number: " + courses[i][j].getCourseNumber());
82     }
83 }
84
85 System.out.println("\nPlease provide a row for the course information tab you are looking for (0 - 199): ");
86 int row = sc.nextInt();
87
88 System.out.println("\nPlease provide a column for the course information tab you are looking for (0 - 9): ");
89 int column = sc.nextInt();
90
91 System.out.println("\n-----\n\nRequested College Course Information:\n\nCourse Reference Number: " + courses[row][column].getCourseReference() + "\nCourse Number: " + courses[row][column].getCourseNumber());
92 }
```

## Part 3



```
100 //The following code takes in two values, one for the row and one for the column of the array.
101 System.out.println("\nPlease provide a row for the course information tab you are looking for (0 - 199): ");
102 int row = sc.nextInt();
103
104 System.out.println("\nPlease provide a column for the course information tab you are looking for (0 - 9): ");
105 int column = sc.nextInt();
106
107 //This code prints out the specific object you want.
108 System.out.println("\n-----\nRequested College Course Information:\n\nCourse Reference Number: " + courses[row][column].getCourseReference() + "\nCourse Number: " + courses[row][column].getCourseNumber());
109
110 //If the column and row entered are out of bounds of the array, the next exception is caught. We then ask for input again with an appropriate error message.
111 catch (ArrayIndexOutOfBoundsException e)
112 {
113     System.out.println("\nThe row and column you entered do not exist in the database. Please enter the correct values.");
114     System.out.println("\nPlease provide a row for the course information tab you are looking for (0 - 199): ");
115     int row = sc.nextInt();
116     System.out.println("\nPlease provide a column for the course information tab you are looking for (0 - 9): ");
117     int column = sc.nextInt();
118     System.out.println("\n-----\nRequested College Course Information:\n\nCourse Reference Number: " + courses[row][column].getCourseReference() + "\nCourse Number: " + courses[row][column].getCourseNumber());
119 }
120 }
```