ExceptionExample.java

```java
1  package class18;
2
3  import java.math.BigDecimal;
6
7  public class ExceptionExample {
8
9      public static void main(String[] args) {
10         System.out.println("********** WRONG ANSWERS **********");
11         System.out.println("********** INTEGER OVERFLOW **********");
12         int a = 2000000000;
13         int b = 2000000000;
14         System.out.println("a + b = " + (a+b));
15         System.out.println("********** FLOATING POINT ROUNDING **********");
16         float a1 = 1234567.12f;
17         float b1 = 7654321.65f;
18         System.out.println("a1 + b1 = " + (a1+b1));
19         System.out.println("********** DOUBLE IMPRECISION **********");
20         double a2 = 1.0;
21         double b2 = 1.1;
22         System.out.println("a2 - b2 = " + (a2-b2));
23
24         System.out.println("********** CORRECT ANSWERS **********");
25         BigInteger a3 = new BigInteger("2000000000");
26         BigInteger b3 = new BigInteger("2000000000");
27         System.out.println("a3 + b3 = " + a3.add(b3));
28         double a4 = 1234567.12;
29         double b4 = 7654321.65;
30         System.out.println("a4 + b4 = " + (a4+b4));
31         BigDecimal a5 = new BigDecimal("1.0");
32         BigDecimal b5 = new BigDecimal("1.1");
33         System.out.println("a5 - b5 = " + a5.subtract(b5));
34
35         System.out.println("********** EXCEPTION EXAMPLE **********");
36         //System.out.println("5 / 0 = " + 5/0);
37
38         System.out.println("********** EXCEPTION HANDLING EXAMPLE **********");
39         try {
40             System.out.println("5 / 0 = " + 5/0);
41         } catch (Exception e) {
42             System.out.println("oops... this happened: " + e.getMessage());
43             e.printStackTrace();
44         } // end catch
45
46         System.out.println("********** EXCEPTIONAL SITUATION EXAMPLE **********");
47         System.out.println("Please enter a number: ");
48         Scanner input = new Scanner(System.in);
49         int grade = input.nextInt();
50         System.out.println("You entered the number: " + grade);
51
52         System.out.println("********** EXCEPTIONAL SITUATION SIMPLE EXAMPLE **********");
53         try {
54             System.out.println("Please enter a number: ");
55             Scanner input2 = new Scanner(System.in);
56             int grade2 = input2.nextInt();
57             System.out.println("You entered the number: " + grade2);
58         } catch (Exception e) {
59             System.out.println("I said enter a number!");
```

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60          } // end catch
61
62          System.out.println("********** EXCEPTIONAL SITUATION PROPER EXAMPLE **********");
63          boolean keepGoing = true;
64          // define input3 and grade3 here due to scope!
65          Scanner input3 = new Scanner(System.in);
66          int grade3 = 0;
67          while (keepGoing) {
68              try {
69                  System.out.println("Please enter a number: ");
70                  grade3 = input3.nextInt(); // if the entry isn't valid, an exception is
   generated
71                  // if we make it to this line of code, we know an integer was entered!
72                  // set the sentinel to let us out of the loop
73                  keepGoing = false;
74              } catch (Exception e) {
75                  System.out.println("I said enter a number!");
76                  input3.nextLine(); // clears the bad entry from the Scanner's buffer
77              } // end catch
78          } // end while
79          System.out.println("You entered the number: " + grade3);
80
81          System.out.println("********** FINALLY EXAMPLE **********");
82          boolean keepGoing2 = true;
83          // define input4 and grade4 here due to scope!
84          Scanner input4 = new Scanner(System.in);
85          int grade4 = 0;
86          while (keepGoing2) {
87              try {
88                  System.out.println("Please enter a number: ");
89                  grade4 = input4.nextInt(); // if the entry isn't valid, an exception is
   generated
90                  // if we make it to this line of code, we know an integer was entered!
91                  // set the sentinel to let us out of the loop
92                  keepGoing2 = false;
93              } catch (Exception e) {
94                  System.out.println("I said enter a number!");
95                  input4.nextLine(); // clears the bad entry from the Scanner's buffer
96              } finally {
97                  System.out.println("In the finally block!");
98              } // end finally
99          } // end while
100         System.out.println("You entered the number: " + grade4);
101     } // end main
102
103 } // end ExceptionExample
```