

```
1 // Mutiple decisions - will always execute because of the else
2 // Teachers mark book - from marks to symbols
3
4 import javax.swing.JOptionPane;
5
6 public class TeacherSymbolGenerator6 {
7
8     public static void main(String[] args) {
9
10         String marksSt = null;
11         double marks = 0.0;
12
13         String outOfSt = null;
14         int outOf = 0;
15
16         double percentage = 0.0;
17         String symbol = null;
18
19         // Here the casting from String to double has been done in two steps
20         marksSt = JOptionPane.showInputDialog(null, "What mark did the learner get?");
21         marks = Double.parseDouble(marksSt);
22
23         // Here the casting from String to integer has been done in two steps
24         outOfSt = JOptionPane.showInputDialog(null, "What was the test out of - max
25         marks");
26         outOf = Integer.parseInt(outOfSt);
27
28         // Validation to ensure good data. Marks cannot be larger than the test
29         if (marks > outOf) {
30             System.out.println("Error with mark input");
31             System.exit(0);
32         }
33
34         // From integer to double is allowed - widening conversion applies
35         percentage = (marks/outOf) * 100;
36
37         // Must round or the symbol allocation becomes complicated
38         percentage = Math.round(percentage);
39
40         // Combination of if and else
41         // Compulsory that one of the statement must execute
42         if(percentage >= 90 && percentage <=100)
43             symbol = "A+";
44
45         else if(percentage >= 80 && percentage <= 89)
46             symbol = "A";
47
48         else if(percentage >= 70 && percentage <= 79)
49             symbol = "B";
50
51         else if(percentage >= 60 && percentage <= 69)
52             symbol = "C";
53
54         else if (percentage >= 50 && percentage <= 59)
55             symbol = "D";
56
57         else if (percentage >= 40 && percentage <= 49)
58             symbol = "E";
59
60         else {
61             symbol = "Fail";
62             System.out.println("You must attend academic enrichment lessons");
63         }
64
65         // Useful informative output messages
66         System.out.println("The learner got " + marksSt + " out of a total of " + outOfSt);
67         System.out.println("The percentage is " + percentage + " and the symbol is " +
68         symbol);
69     }
```

```
70  }
71  =====
72  ===
73  OUTPUT
74  ----jGRASP exec: java TeacherSymbolGenerator6
75  The learner got 49.5 out of a total of 50
76  The percentage is 99.0 and the symbol is A+
77
78  ----jGRASP: operation complete.
79
80  OUTPUT 2
81
82  ----jGRASP exec: java TeacherSymbolGenerator6
83  The learner got 24.5 out of a total of 50
84  The percentage is 49.0 and the symbol is E
85
86  ----jGRASP: operation complete.
87
88  OUTPUT3
89  ----jGRASP exec: java TeacherSymbolGenerator6
90  You must attend academic enrichment lessons
91  The learner got 9 out of a total of 50
92  The percentage is 18.0 and the symbol is Fail
93
94  ----jGRASP: operation complete.
```