H – Case Structures

Student Exercises

# Exercises

1. **BahamaLetterGrade** - Represents a letter grade as assigned in the Bahamas universities. Source: <http://en.wikipedia.org/wiki/Letter_grade>
2. **Feedback** – Represents an opinion rating as feedback, where 1 is “no opinion”, 2 is “strongly disagree”, 3 is “disagree”, 4 is “agree, and 5 is “strongly agree”.
3. **HazardousMaterial** – Represents the six hazardous material codes of ‘A’ through ‘F’.

# BahamaLetterGrade

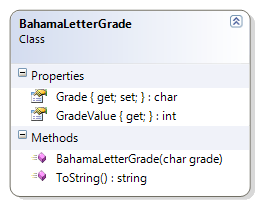
## Problem Statement

Write the code for the BahamaLetterGrade class that represents a letter grade as assigned in the Bahamas universities (Source: <http://en.wikipedia.org/wiki/Letter_grade>). Each letter grade is also associated with a grade value. The solution must meet the following requirements *(note – you do not need to perform validation for this exercise)*:

* Should get and set the grade (as a single letter)
* Should ensure the grade is in upper-case
* Should get the appropriate descriptions for the grade, based on the following table:

|  |  |  |
| --- | --- | --- |
| Grade | Grade Value | Description |
| A | 4 | A-4 - 90-100% |
| B | 3 | B-3 - 71-89% |
| C | 2 | C-2 - 56-70% |
| D | 1 | D-1 - 46-55% |
| F | 0 | F-0 - 0-45% |

Use the following class diagram when creating your solution.



# Feedback

## Problem Statement

Represents an opinion rating as feedback, where 1 is “no opinion”, 2 is “strongly disagree”, 3 is “disagree”, 4 is “agree, and 5 is “strongly agree”.

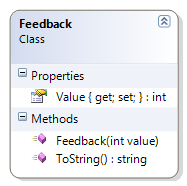
## Problem Statement

Write the code for the Feedback class that represents a rating on a survey where the feedback is given using the values 1 through 5, inclusive. The solution must meet the following requirements (*note – you do not need to perform validation for this sample)*:

* Should get and set the feedback value
* Should get the appropriate string result when using the ToString() method, based on the following table:

|  |  |
| --- | --- |
| Value | Description |
| 1 | no opinion |
| 2 | strongly disagree |
| 3 | disagree |
| 4 | agree |
| 5 | strongly agree |

Use the following class diagram when creating your solution.



# HazardousMaterial

The class code for the hazardous material can only be the letters ‘A’ through ‘F’, inclusive.

## Problem Statement

Rewrite the code for the HazardousMaterial class to make use of the switch statement. The solution must meet the following requirements (new requirements are in ***green, bold italic*** font):

* Should return the class code as the classification
* Should make sure only class codes ‘A’ through ‘F’ are allowed (in either upper or lower case)
* Should make sure the classification is stored in upper case
* Should get the description for the class, based on the following table  
  ***You must use a switch statement to get the results***

|  |  |
| --- | --- |
| **Class Code** | **Description** |
| A | Compressed Gas |
| B | Flammable and Combustible Material |
| C | Oxidizing Material |
| D | Poisonous and Infectious Material |
| E | Corrosive Material |
| F | Dangerously Reactive Material |

* Should override the ToString() method to get the full description and class code in the following format:
  + “Class ClassCode - Description”

Use the following class diagram when creating your solution.

