**CPSC1012 In-Class Exercise #3 – Case Structure**

Student Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Student Mark: \_\_\_\_\_\_\_\_ / **5**

**Instructions**

Complete this exercise on your own. When you have finished this exercise write your name on the board to get your instructor to mark your exercise.

**Gong Xi Fa Cai**

In the Chinese calendar, every year is associated with a particular animal. The 12-year animal cycle is rat, ox, tiger, rabbit, dragon, snake, horse, ram (or goat), monkey, rooster, dog, and boar. The year 1900 is a year of the rat; thus 1901 is a year of the ox and 1912 is another year of the rat. If you know in what year a person was born, you can compute the offset from 1900 and determine the animal associated with that person’s year of birth. The animal associated with the offset from the year 1900 is shown in the table below.

|  |  |
| --- | --- |
| **Offset of 12 from 1900** | **Animal** |
| 0 | Rat |
| 1 | Ox |
| 2 | Tiger |
| 3 | Rabbit |
| 4 | Dragon |
| 5 | Snake |
| 6 | Horse |
| 7 | Goat |
| 8 | Monkey |
| 9 | Rooster |
| 10 | Dog |
| 11 | Pig |

**Step 1:** Create a program named ***CPSC1012-Exercise3-YourName*** that determines the animal corresponding to an input year of birth. Assume that the input year is 1900 or later. You must use a case structure in your solution.

*Input*: Year of birth

*Output*: Corresponding animal from the Chinese calendar

**Step 2:** Test your program using the following test plan. If you discover mistakes in your program, correct them, and execute the test plan again.

|  |  |  |  |
| --- | --- | --- | --- |
| **Test Plan for *Exercise3*** | | | |
| ***Test case*** | ***Test Data*** | ***Expected result*** | ***Checked*** |
| Rooster | 2017 | Year of the Rooster |  |
| Monkey | 2016 | Year of the Monkey |  |
| Goat | 2015 | Year of the Goat |  |
| Horse | 2014 | Year of the Horse |  |
| Snake | 2013 | Year of the Snake |  |
| Dragon | 2012 | Year of the Dragon |  |
| Rabbit | 2011 | Year of the Rabbit |  |
| Tiger | 2010 | Year of the Tiger |  |
| Ox | 2009 | Year of the Ox |  |
| Rat | 2008 | Year of the Rat |  |
| Pig | 2007 | Year of the Pig |  |
| Dog | 2006 | Year of the Dog |  |