ENGINEERING H192
DAILY ASSIGNMENT B09

Selection structures: switch – case II:

As you've seen, the **switch** statement can be used to implement menu-like transfers. In addition, the **switch** selection structure in C/C++ can be used as a convenient way to count the occurrences of integral data values. In this assignment you are to write a complete C/C++ program, **b09.cpp**, in which the user specifies how many times to "roll" a pair of six-sided dice. The program rolls the dice and checks to see if doubles were rolled. It counts the number rolled each time doubles occur (i.e. in order to tally how many pairs of ones, twos, etc. were rolled). After each set of rolls is complete, the program displays the number of occurances for each double and gives the user the chance to roll the dice again. Counters for each type of double are reset to zero after each series of rolls.

In this program:

```
a while or do-while
{
   will control the overall execution of the program, prompting the user for the
   number of times to roll the dice

   a for loop
   {
      will roll the dice the specified number of times, calling rand() and using
      the modulus operator, %, for each die

      an if conditional
      {
         will check to see if doubles were rolled

         a switch structure
         {
            will count which pair of doubles was rolled, incrementing the
            appropriate counter
         }
      }
   }
}
```

Your program must:

(1) Execute indefinitely until the user decides to quit
(2) Prompt the user for the number of times to roll the dice, an entry of "0" (zero) stops the program
(3) Inform the user when an entry is invalid (less than zero)
(4) Keep track of how many pairs of each value are rolled, i.e. ones (or "snake eyes"), twos, threes, etc.
(5) Display the number of doubles of ones, twos, threes, fours, fives, and sixes were rolled after each set of rolls

Once **b09.cpp** is running correctly, modify it to open an output file, **b09result.txt**, and write everything to the file that is being written to the screen, submit a copy of the source code, sample output from your program, and this sheet. Test your program several times by generating large numbers of rolls and verifying that the distribution of doubles rolled is approximately equal.

Name_____Instructor_____Seat_____Hour_____