Benjmain R. Olson, May 24, 2014
CS 162 – Introduction to Computer Science
Instructor: Terry Rooker
Project 4 Test Plan and Reflection:

Procedure:

The program was run a few times to verify the general logic in main() was behaving as expected:

1. Only two characters are chosen.
2. These two characters alternate as attacker and defender, against each other.
3. The program exits when one of the characters reduces the other's strength to 0 or less.

The above behavior was verified in the program run as a whole.

Each player was tested against each other based on the following general criteria:

1. Randomness of rolled dice is maintained.
2. The two players chosen are able to reduce each other's strength when both attacking and defending.
3. All functions unique to a given class were called, verified by cout statements to the user and gdb step-through.

EXAMPLE RUN, with function calls and user input commented in red:

```
ben@ubuntu:~/Public/cs162/project4do$ ./combat2

function showRules() is called
PROJECT 3, COMBAT GAME WITH DICE

This game is played entirely by the computer itself.
        Rules:
Each round is determined by following rules 1 - 6 in order:
1. You select two players out of four to compete.
2. The attacker and defender both roll dice
based on the type of each player's dice.
(eg: 2d6 is 2 dice with 6 sides each).
3. If the difference is in favor of the attacker
and greater than the defender's armor,
the defenders strength decreases by the following amount:
(attack - defense) - armor.
4. If the difference is in favor of the defender
the attacker's strength may be deducted in the same manner.
5. The pair of combatants take turns attacking and defending each other.
6. If one player loses all strength, that player
is eliminated from the game and the other one wins.

You may choose to continue the game or quit
at the conclusion of each round.
(any key to continue)
user hits <Enter>
```

Output Format:
Name: attack<#dice>d<#sides>, attack<#dice>d<#sides>, armor, strength
Goblin 1: 2d6, 1d6, 3, 8
Barbarian 1: 2d6, 2d6, 0, 12
Reptile 1: 3d6, 1d6, 7, 18
Blue Man 1: 2d10, 3d6, 3, 12
Dragon 1: 3d6, 1d6, 7, 18
Goblin 2: 2d6, 1d6, 3, 8
Barbarian 2: 2d6, 2d6, 0, 12
Reptile 2: 3d6, 1d6, 7, 18
Blue Man 2: 2d10, 3d6, 3, 12
Dragon 2: 3d6, 1d6, 7, 18
(any key to continue)
user hits <Enter>

Please choose a pair to compete:
Player 0: Goblin 1
Player 1: Barbarian 1
Player 2: Reptile 1
Player 3: Blue Man 1
Player 4: Dragon 1
Player 5: Goblin 2
Player 6: Barbarian 2
Player 7: Reptile 2
Player 8: Blue Man 2
Player 9: Dragon 2
Enter attacker's # and defender's # with a space in between:
(note: this has been tested with invalid input, which is anything other than the format (#<space>#) where each # is a single digit)
user enters 4 6 (expected result: Dragon 1 set as initial attacker and Barbarian 2 set as initial defender)

You chose Dragon 1 as the attacker and
Barbarian 2 as the defender. user input gives expected result

Attacker Dragon 1 (armor = 7) rolled 11.
Dragon's tail whip increased roll by 2. from dragon.tailWhip()
New roll: 13
Defender Barbarian 2 (armor = 0) rolled 8.
Barbarian's shield increased roll by 5. from barbarian.modifyRoll()
New roll: 13
Dragon 1's strength value: 18 from showStats()
Barbarian 2's strength value: 12

Would you like to continue with next round? from do-while loop in main()
Hit <Enter> to continue or any key to quit game:
user hits <Enter> and do-while loop in main repeats until user hits other key then <Enter>
Barbarian 2 becomes the new Attacker and Dragon 1 becomes the new Defender next round.
…
Dragon 1 is the winner!
…
END PROGRAM