

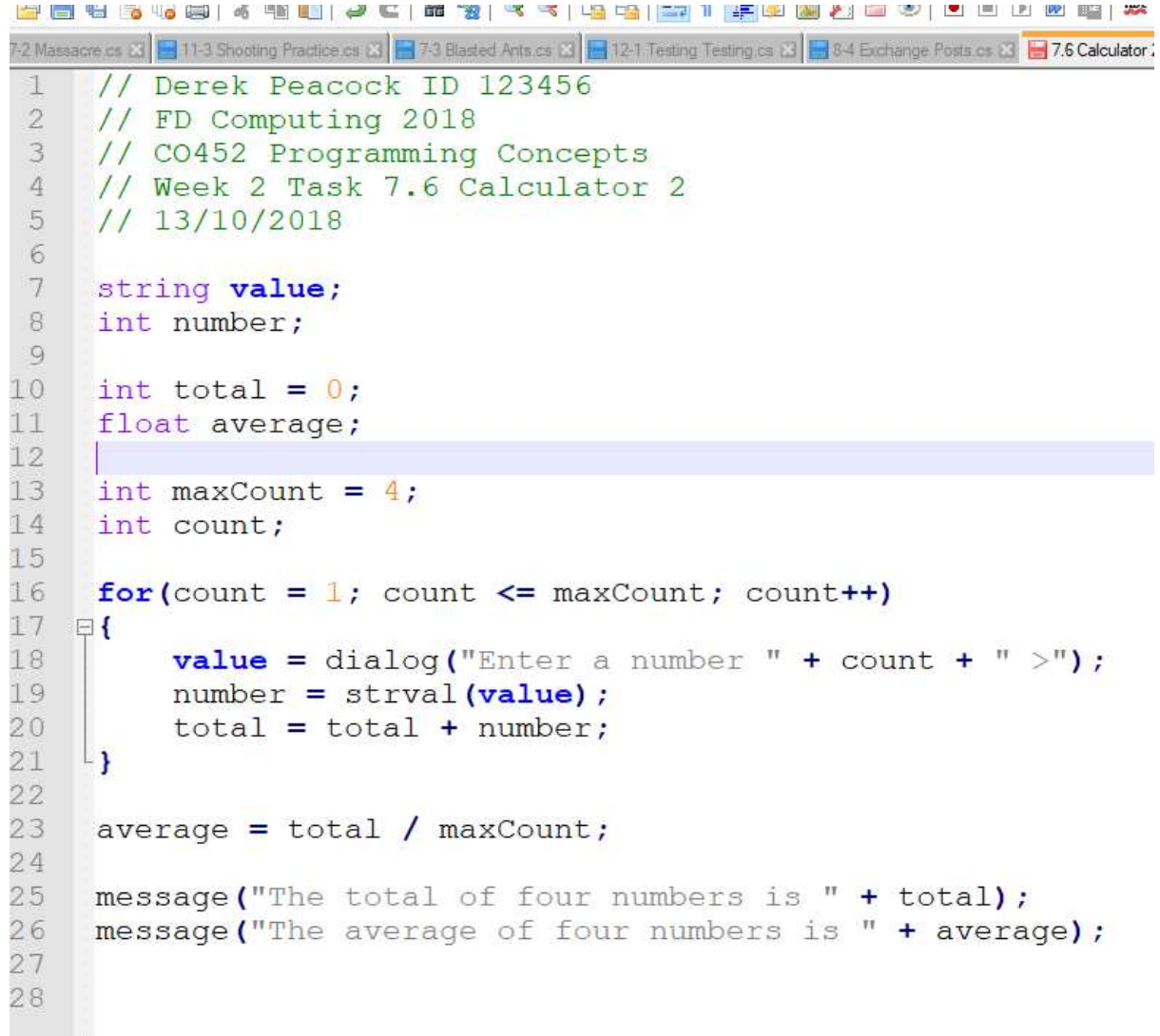
CO452 CeeBot Classwork Week 2

Task 7.6 Calculator 2

Program Description

Your task is to use a for loop to input 4 numbers. When the loop has finished, output the total and average of the 4 numbers

Program Code

A screenshot of a code editor window with multiple tabs. The active tab is titled '7.6 Calculator'. The code is written in C# and includes comments at the top identifying the author as Derek Peacock, the course as FD Computing 2018, and the task as CO452 Programming Concepts, Week 2 Task 7.6 Calculator 2, dated 13/10/2018. The code declares a string 'value' and an integer 'number'. It initializes 'total' to 0 and 'average' as a float. A 'for' loop runs from 'count = 1' to 'count = 4', where each iteration prompts the user to enter a number, converts it to an integer, and adds it to 'total'. After the loop, the 'average' is calculated as 'total / maxCount'. Finally, two message boxes are displayed: one showing the total and another showing the average.

```
1 // Derek Peacock ID 123456
2 // FD Computing 2018
3 // CO452 Programming Concepts
4 // Week 2 Task 7.6 Calculator 2
5 // 13/10/2018
6
7 string value;
8 int number;
9
10 int total = 0;
11 float average;
12
13 int maxCount = 4;
14 int count;
15
16 for(count = 1; count <= maxCount; count++)
17 {
18     value = dialog("Enter a number " + count + " >");
19     number = strval(value);
20     total = total + number;
21 }
22
23 average = total / maxCount;
24
25 message("The total of four numbers is " + total);
26 message("The average of four numbers is " + average);
27
28
```

Task 7.2 Massacre

Program Algorithm

Your task is to destroy the 10 spiders that surround you.

Program Code

```

1 // Derek Peacock ID 123456
2 // FD Computing 2018
3 // CO452 Programming Concepts
4 // Week 2 Task 7.2 Massacre
5 // 13/10/2018
6
7 int count = 0;
8
9 for(count = 0; count < 10; count++)
10 {
11     fire();
12     turn(15);
13     wait(1.5);
14 }
15
    
```

Task 11.3 Shooting Practice

Program Description

Using nested loops is the most efficient way. Create a loop (the inner loop) that destroys one side of targets, and then repeat that loop 4 times (the outer loop) turning after each side is destroyed.

Algorithm

Program Code

```

1 // Derek Peacock ID 123456
2 // FD Computing 2018
3 // CO452 Programming Concepts
4 // Week 2 Task 11.3 Shooting Practice
5 // 13/10/2018
6
7 int count;
8 int side;
9
10 for(side = 0; side < 4; side++)
11 {
12     for(count = 0; count < 5; count++)
13     {
14         move(5);
15         turn(90);
16         fire();
17         turn(-90);
18     }
19     turn(-90);
20 }
21
    
```

Task 7.3 Blasted Ants

Program Description

This exercise uses an infinite loop to destroy all the attacking ants

Program Code

```
7-2 Massacre.cs x 11-3 Shooting Practice.cs x 7-3 Blasted Ants.cs x 12-1 Testing Test
1 // Derek Peacock ID 123456
2 // FD Computing 2018
3 // CO452 Programming Concepts
4 // Week 2 Task 7.3 Blasted Ants
5 // 13/10/2018
6
7 while(true)
8 {
9     drive(0,1);
10    fire(4);
11 }
```

Task 12.1 Testing -Testing

Program Description

Power Cells are not what they used to be! You have been asked to design a test program for them that can be run in a loop any number of times

Program Code

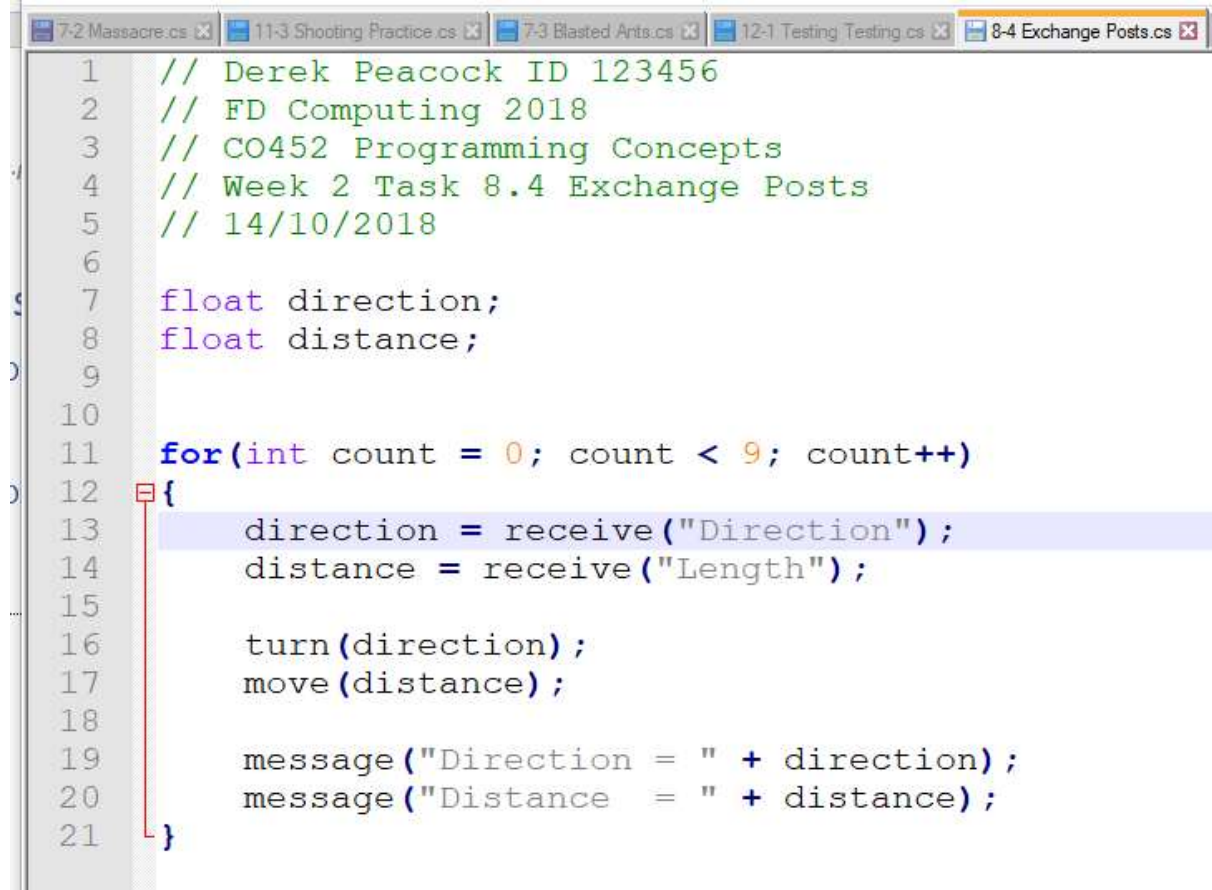
```
7-2 Massacre.cs x 11-3 Shooting Practice.cs x 7-3 Blasted Ants.cs x 12-1 Testing Testing.cs x 8-4 Exchange Posts.cs x 7-6 Calc
1 // Derek Peacock ID 123456
2 // FD Computing 2018
3 // CO452 Programming Concepts
4 // Week 2 Task 12.1 Testing Testing
5 // 14/10/2018
6
7 int noTests;
8 int testNo = 0;
9 string value;
10
11 value = dialog("Enter number of tests > ");
12 noTests = strval(value);
13
14 while(testNo < noTests)
15 {
16     testNo++;
17
18     move(3);
19     turn(180);
20     fire(0.5);
21     move(-3);
22
23     message("Test " + testNo +
24            " Energy Level " + energyCell.energyLevel);
25 }
```

Task 8.4 Exchange Posts

Program Description

This exercise uses Information Exchange Posts which store information that can be picked up by any robot within 10 metres. Your robot is on a very dangerous path through a lava lake. You may just be able to see your goal on the right .. a tall Lightning Conductor in the distance across the lake.

Program Code



```
1 // Derek Peacock ID 123456
2 // FD Computing 2018
3 // CO452 Programming Concepts
4 // Week 2 Task 8.4 Exchange Posts
5 // 14/10/2018
6
7 float direction;
8 float distance;
9
10
11 for(int count = 0; count < 9; count++)
12 {
13     direction = receive("Direction");
14     distance = receive("Length");
15
16     turn(direction);
17     move(distance);
18
19     message("Direction = " + direction);
20     message("Distance = " + distance);
21 }
```