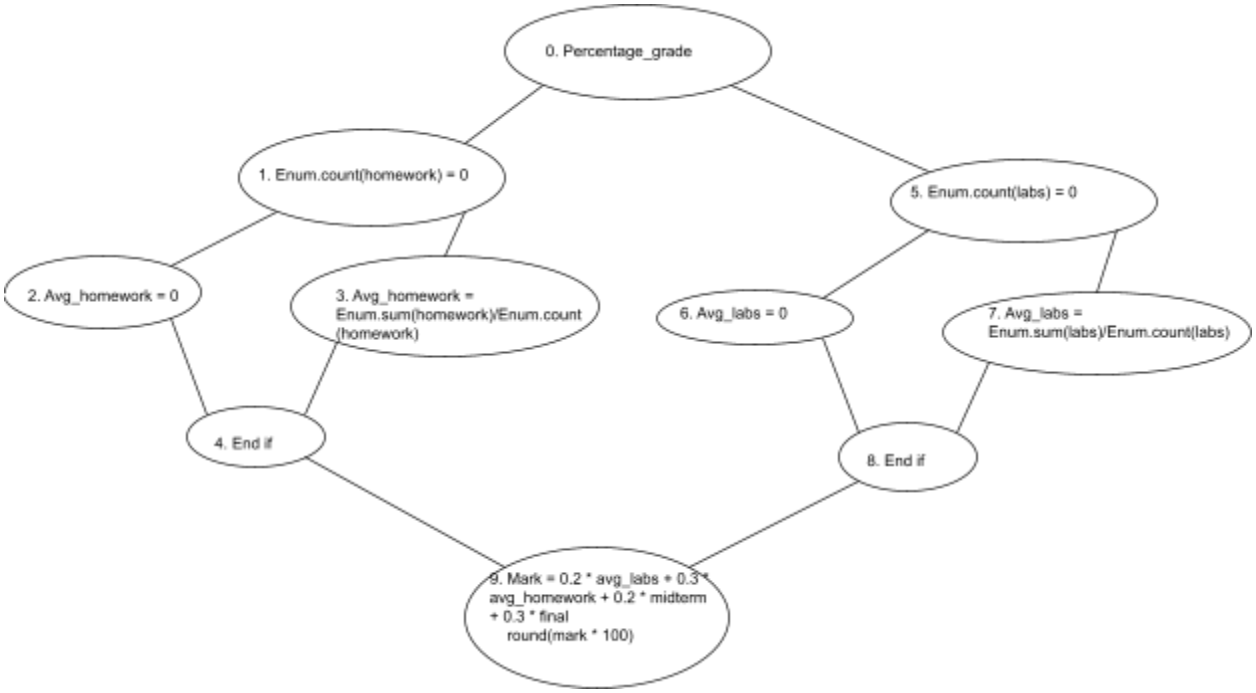
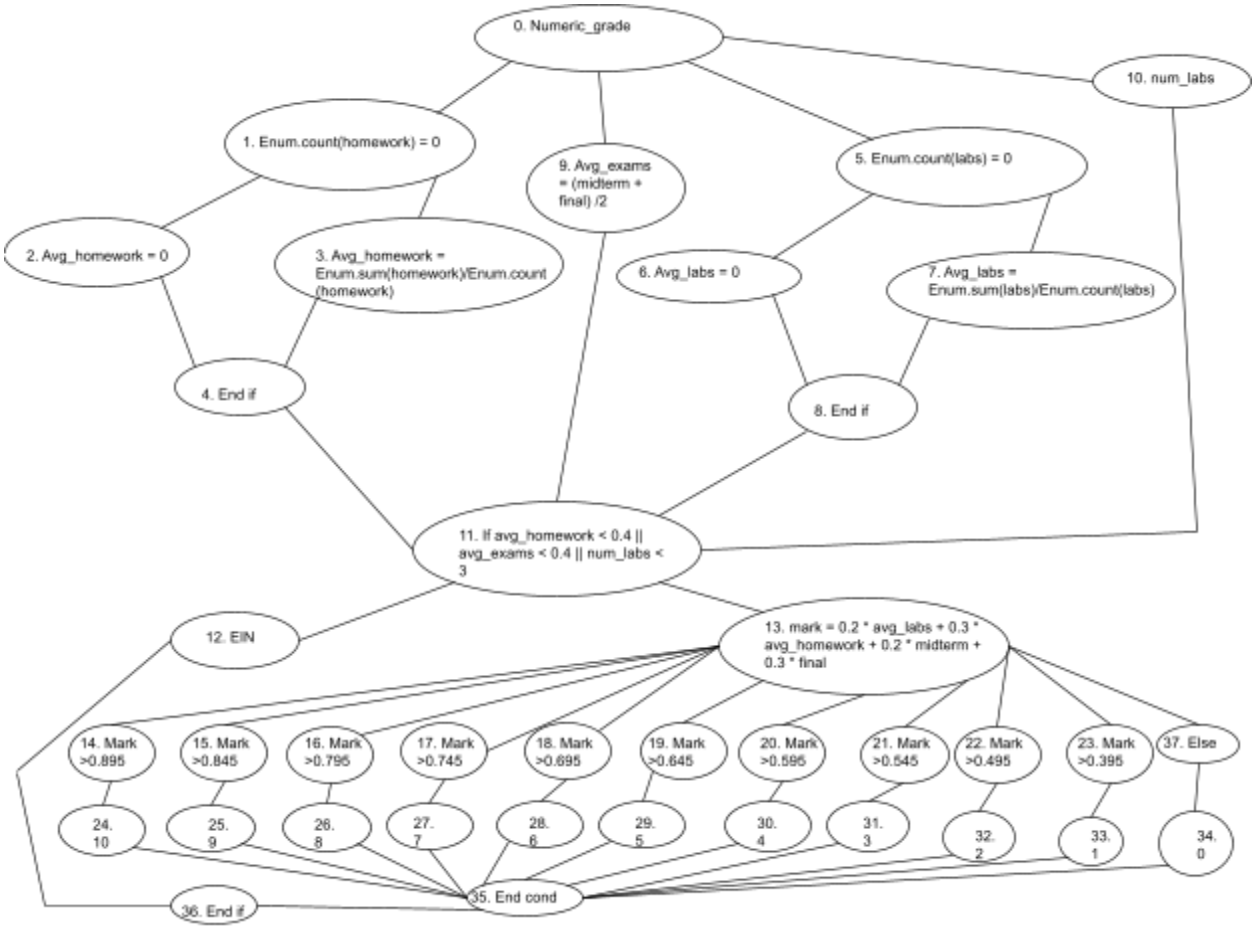
Assignment 2
Riley de Domenico
300016694

1.1
Percentage_grade



Letter_grade

Numeric_grade



1.2

Test Case Number	Test Data	Expected Results	Conditions Covered	Branches Covered
1	Count Homework = 0 Count Labs = 0	EIN/0	Incomplete homework and incomplete labs - conditions = enum.count(homework) =0 and enum.count(labs)=0 So from graphs above, conditions 1 and conditions 5 in each of the graphs	Branch paths: 1,2,4,11,12 5,6,8,11,12
2	Count	EIN/0	Condition 1	Branch paths:

	Homework = 0 Count Labs >0		when condition 5 is not met	1,2,4,11,12 5,7,8,11,12
3	Count Homework > 0 Count Labs =0	EIN/0	Condition 5 when condition 1 is not met	Branch paths: 1,3,4,11,12 5,6,8,11,12
4	Midterm = 0 Final = 0	EIN/0	Condition 9 met	9, 11, 12
5	Avg_homework = 0.3	EIN/0	Condition 11	1,3,4,11,12
6	Avg_exams = 0.3	EIN/0	Condition 11	9, 11, 12
7	Num_labs = 2	EIN/0	Condition 11	10, 11, 12
8	Avg_labs = 1 Avg_homework = 1 Avg_exams = 1	100 A+ 10	Condition 14	1,3,4,5,7,8,10,11,13,14,24,35,36
9	Avg_labs = 0.85 Avg_homework = 0.85 Avg_exams = 0.85	85 A 9	Condition 15	1,3,4,5,7,8,10,11,13,15,25,35,36
10	Avg_labs = 0.8 Avg_homework = 0.8 Avg_exams = 0.8	8 A- 8	Condition 16	1,3,4,5,7,8,10,11,13,16,26,35,36
11	Avg_labs = 0.75 Avg_homework = 0.75 Avg_exams = 0.75	75 B+ 7	Condition 17	1,3,4,5,7,8,10,11,13,17,27,35,36
12	Avg_labs = 0.7 Avg_homework = 0.7 Avg_exams = 0.7	70 B 6	Condition 18	1,3,4,5,7,8,10,11,13,18,28,35,36
13	Avg_labs = 0.65	65	Condition 19	1,3,4,5,7,8,10,11

	Avg_homework = 0.65 Avg_exams = 0.65	C+ 5		,13,19,29,35,36
14	Avg_labs = 0.6 Avg_homework = 0.6 Avg_exams = 0.6	60 C 4	Condition 20	1,3,4,5,7,8,10,11 ,13,20,30,35,36
15	Avg_labs = 0.55 Avg_homework = 0.55 Avg_exams = 0.55	55 D+ 3	Condition 21	1,3,4,5,7,8,10,11 ,13,21,31,35,36
16	Avg_labs = 0.50 Avg_homework = 0.50 Avg_exams = 0.50	50 D 2	Condition 22	1,3,4,5,7,8,10,11 ,13,22,32,35,36
17	Avg_labs = 0.45 Avg_homework = 0.45 Avg_exams = 0.45	45 E 1	Condition 23	1,3,4,5,7,8,10,11 ,13,23,33,35,36
18	Avg_labs = 0 Avg_homework = 0.4 Avg_exams = 0.4	30 F 0	Condition 24	1,3,4,5,7,8,10,11 ,13,27,34,35,36

1.4

Figure 1. Coverage of ExUnit Suite

```
Finished in 0.1 seconds
40 tests, 0 failures

Randomized with seed 88000

Generating cover results ...

Percentage | Module
-----------|--------------------------
     0.00% | GradesWeb
     0.00% | GradesWeb.ChannelCase
     0.00% | GradesWeb.ErrorHelpers
     0.00% | GradesWeb.PageLive
    50.00% | GradesWeb.LayoutView
    66.67% | GradesWeb.ErrorView
    75.00% | Grades.Application
    75.00% | GradesWeb.Router
   100.00% | Grades
   100.00% | Grades.Calculator
   100.00% | GradesWeb.ConnCase
   100.00% | GradesWeb.Endpoint
   100.00% | GradesWeb.Router.Helpers
   100.00% | GradesWeb.Telemetry
   100.00% | GradesWeb.UserSocket
-----------|--------------------------
    77.11% | Total

Generated HTML coverage results in "cover" directory
```

100% Coverage was achieved for Grades.Calculator through the ExUnit test suite. The limitations of statement level coverage here is that we cannot test the false conditions, but instead only the conditions we have a valid expectation for. In this case we can address these limitations by performing actions to ensure that incorrect values are not input. In the case of this code, if the calculator were to read in a value of A+ instead of a 1 this would cause an error which cannot be covered by statement coverage. So limiting what can be input can address this limitation.