PROGRAMMING PROGRESS TEST FEEDBACK JANUARY 2011

In average the results of the progress test have been better than in previous years. As you will see below, they are particularly good for Actuarial Science students, but there has also been improvement amongst the Maths cohort.
From the Actuarial Science cohort 76 students took the test. Overall only 12 students (16% of cohort) got less than 40% in the test.

- 33 students (43% of students) obtained grades between 81% and 100% with 10 students scoring the maximum grade of 100%.
- 16 students (21% of students) obtained grades between 61% and 80%.
- 15 students (20% of students) obtained grades between 40% and 60%.
- 8 students (11% of students) obtained grades between 20% and 39%.
- 4 students (5% of students) obtained grades under 20%.

From the Mathematics cohort 124 students took the test. Overall 37 students (30% of cohort) got less than 40% in the test.

- 31 students (25% of students) obtained grades between 81% and 100% with 5 students scoring the maximum grade of 100%.
- 23 students (18% of students) obtained grades between 61% and 80%.
- 33 students (27% of students) obtained grades between 40% and 60%.
- 19 students (15% of students) obtained grades between 20% and 39%.
- 18 students (15% of students) obtained grades under 20%.

The solutions to the test are now available from my web page. Below some comments on common mistakes:

Question 1

i) Most students managed to get one version of the function right. Quite a few students failed to get the second version right for various reasons. The most common reason was a wrong use of the IF function (wrong number or wrong arguments).

ii) Most students got part of question 2 right, specially the last question which was the easiest. There were often errors in parts (a) and (b) with students not identifying the right regions where the function was positive or larger than 1.

Question 2

Many people got parts of this question wrong. Most of the problems came from using wrong programming structures at various levels (incorrect If statements and HLookup functions). This doesn't mean they got 0 points, but they lost a certain amount of points depending on the gravity of the mistakes.

Lots of people got the variable types of input and output wrong, even though this was a clear case of a function taking real numbers as input and returning real numbers as output. Clearly a lot of students do not understand that there is only a certain number of types that you can use and that one can not "invent" new ones. Lots of people defined the argument of the function "As Angle" or "As Radians" which are not valid variable types!

Many people use Application.WorksheetFunction.Sin (or .Cos) instead of using the Sin and Cos functions directly. This was not considered as wrong, but is much longer. Sin and Cos functions are built-in VBA.

The majority of people got the last bit right (computing the value of the function for a particular angle).

Question 3

Many of the problems with question 2 also happened with question 3. There were common mistakes on the Select Case/IF structures at various levels, including many problems with nesting the two structures correctly inside each other or expressing the various cases correctly. For example many people wrote things like “Case 9<=x<=13” instead of “Case 9 to 13”. Also, as for question 2, there have been problems with the variable types of input and output, which many people got wrong.

One of the main ingredients necessary to answer this question was to identify the correct time function which gives us the hour of the day. This is the function hour in VBA. Some students also used the function weekday for the first part of the IF/Select Case structure and this was given as correct. Many students failed to identify the correct time functions, which made them loose points.

Question 4

The same sort of problems as for questions 2 and 3 occurred here. Many people have problems with IF/Select Case structures and variable types. Here, as in question 2, people also struggled with the use of the Lookup function and with identifying which information needed to be extracted from the table. Both in questions 2 and 4 there was much more information in the table than was necessary in the

actual code. Some students wasted time writing lots of Lookup functions which were not actually needed in the programmes.

Most people got the last part of the question right (finding the value of the function for a given name), but there were also common mistakes like mixing up the percentage increase and the actual increase in pounds.

Conclusion: Congratulations to all the people that passed and especially to those with first class grades. However, lots of students should revise IF structures and Variable types, as these will still feature in some of the examples of the second part of the module. They are also fundamental aspects of VBA programming and you will need to use them if you ever use VBA professionally.