

Spreadsheet Test Plan and Implementation

Section 3

Development of the Solution

What you have to do

Test Plan

- Plan a chart from data for a stated purpose (1)
- Plan a *what if* investigation including a change of data for a stated purpose (1)
- Plan a *what if* investigation including a change of formula for a stated purpose (1)

Provide evidence of the 3 tasks (3)

Some examples follow this slide.....

From the project booklet

4.5 Test plan with printouts of tests

[6 marks]

- Labelled and highlighted to clearly explain what each printout shows

For the test plan you need to produce a table that will explain what you need to test and how you plan to do this. You will then need to carry out each test and provide annotated evidence (print outs) to show you have done each test.

Below is an example format you could use:

NEEDS	TEST
List all the things you need to test	Explain what you <u>am</u> going to do to test each need.

Below is an example Test Plan — NOTE a third column has been added to show how you could provide evidence of each test— you DO NOT need to include this column in your own test plan!

NEEDS	TEST	POSSIBLE EVIDENCE
Produce a graph for a stated purpose	Produce a graph of players points to show who is leading the league table	Print out of graph
'What if' investigation with a change of data	Arnold Thringblatt won his match this week - Change the number of his wins from 5 to 6	Printout before changes made highlighting Arnold Thringblatt details with predictions of what changes will take place. Then a printout after data was changed highlighting changes to the spreadsheet
'What if' investigation with a change of formula	Change the number of points for a win from 3 to 4 in the 'points for' formula to see if the league standings are affected by a different scoring system.	Printout showing formulas before changes made highlighting 'points for' formula with predictions of what changes will take place – then a printout after formula was changed highlighting changes to the spreadsheet

Test Plan

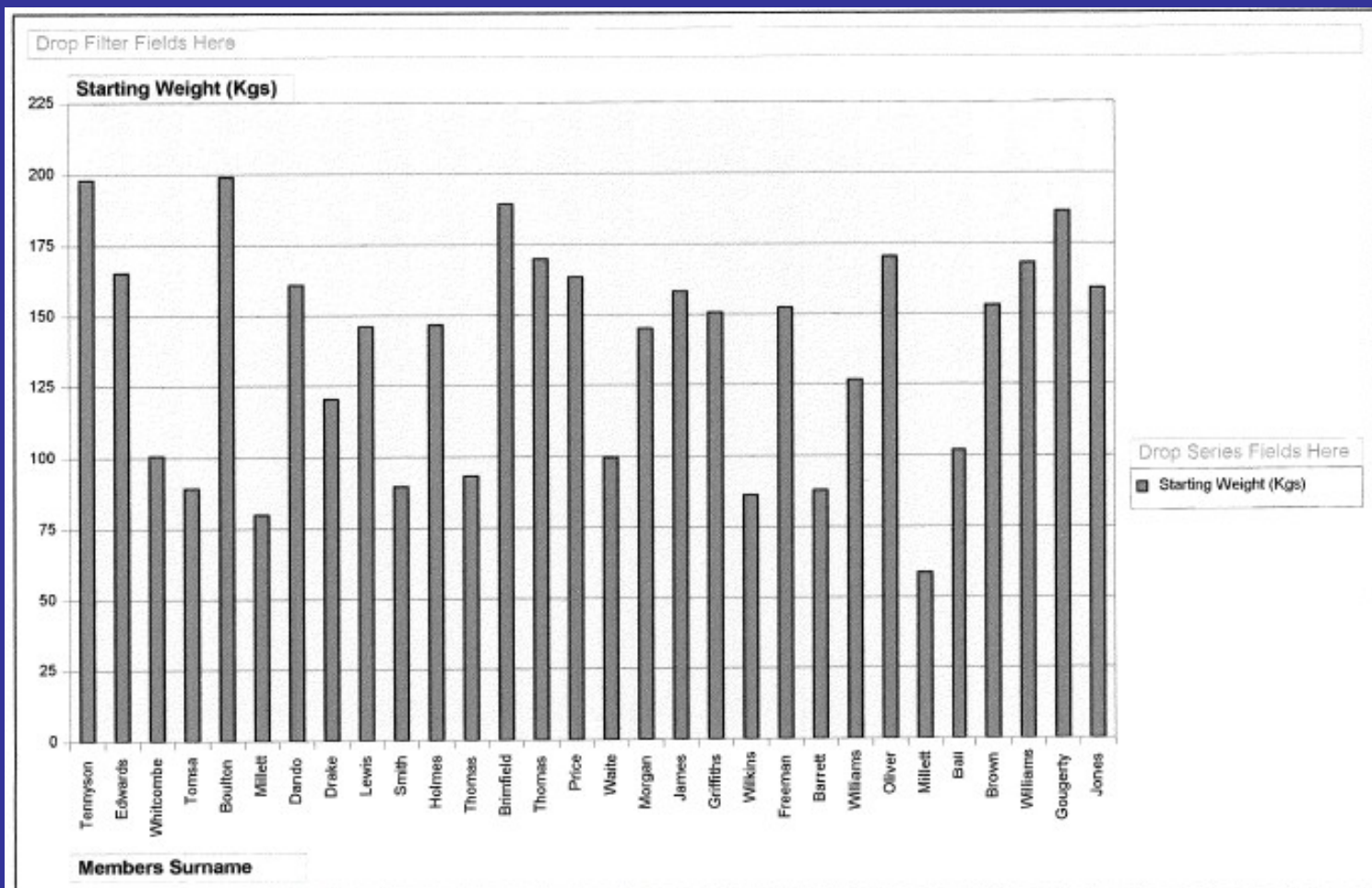
I am going to produce a spreadsheet of the members of staff that work at my business. I will be doing it on the wages for the members of staff that work at my business. I will be working out their total pay before any deductions are taken then using formula to find the net pay.

Test	Reason
I am going to produce a graph to show the amount that certain roles receive with the hours worked.	This will show easily how much members of staff earn weekly. It is very useful to use.
I will change a piece of data in my spreadsheet (the amount of hours and Hourly pay Lisa Williams received)	This will then change the data and the calculations this will prove whether my formula work
I will also change a formula. The "if" formula will include more comments.	I have changed the net pay formula I have added a Christmas bonus to the total the formula now reads =g?-h?-I? +250.

Test Plan

<u>Number</u>	<u>Action</u>	<u>Reason</u>	<u>Expected results</u>	<u>Results</u>
1	Create a cash flow chart.	I want to see if the shop can expect any profit within the next year.	The chart should show all monthly outgoings and incomings.	The chart showed all monthly outgoings and incomings.
2	Creating a graph.	Mr Bold would like to view the overall profit/loss of the previous year. He would requested a graph since it will show any patterns clearly by changing its gradient.	An almost straight line showing a steady increase in profit.	An almost straight line showing a steady increase in profit.
3	“What if” situation 1- changing the data.	Mr Bold wants to know what would happen if the insurance changed from an annual payment of £4,000 to a monthly payment of £800.	The total annual insurance payments should change from £4,000 to £9,600 and the annual turnover should decrease.	The total annual insurance payments changed from £4,000 to £9,600 and the annual turnover decreased.
4	“What if” situation 2- changing the formulae.	Mr Bold wants to know what effect giving the staff small bonuses will have on the annual turnover of the company.	The annual turnover should decrease slightly.	The annual turnover decreased slightly.

I decided to produce a graph showing the range of weights of the members in the Ystrad Mynach Slimming World class. Along the bottom are the names of all of the class members and up the side are their weights. This is useful to my mother because she can then compare the graph of the member's weights in a few months to see who has lost the most weight over that period of time. Reading a graph is much quicker and easier than going through a whole database working out the weight losses.



Slimming World

“What If?”

The Situation

What if the price of attending the class goes up to £4.25 because of the New Year, this would mean that the Tax would increase to £20.95 instead of £15. How will the new Class Price and new Tax effect my Mother's Profit?

The Effect

The increase in Income has increased the class Profit therefore; My Mother would benefit from this increase in Profit. The Week 1 Profit has increased from £224.70 to £233.75. The Week 2 has increased from £180.65 to £189.35. The Week 3 has increased from £166.45 to £168.90. The Week 4 has increased from £231.15 to £241.95.

Taken from project guidance notes produced for WJEC

You need to write down

- i) Why you are going to produce a graph i.e. 'I am going to produce a graph of month v sales to see if there is a seasonal patten'.
- ii) Plan a 'what if' investigation which involves changing data, you must give a reason for doing the investigation. 'I am going to see what affect changing the price of coffee has on the profit'. Printout the changed sheet and also printout the formulas.
- iii) Plan a 'what it' investigation which involves changing a formula, i.e 'I am going to see what effect changing the rate of pay has on profit'. Print the changed sheet, highlight the formulas which have been changed on the formula printout.

You must have labelled printouts for each of the 3 tasks.

For example

Modelling my spreadsheet

*After doing my finances spreadsheet I made two 'what if' investigations. The original spreadsheet's location is N:\my work\big project\finances.xls. The hand-drawn designs for that spreadsheet can be found on the page following this. After that you can find the printout of the original spreadsheet, the printout of the formulas of the original spreadsheet, the 1st investigation, the formulas for is, the 2nd investigation and the formulas for that on pages **, **, **, **, **, ** respectively.*

'What if' investigation 1 - N:\my work\big project\finances 2.xls

The first investigation I did to check what would happen if the owner of the business decided to retire. He would need 2 extra employees to do his work and would then need to raise the prices of the houses. Of course, as the price is increased the demand will fall and so more will have to be spent on advertising and improving the houses.

2 new employers would cost £900 more a year. Raising the prices by £50 meant that the annual income from the houses went from £11,165 to £13,050. This meant that there was extra income for improvements and advertising. I raised the amount of money to be spent on advertising to £500 and meant I had £585 left over to spend on improvements to the houses. For this I made a new row and had to change the formula to work out the annual expenditure to include this new row.

This would mean I would have more annual income, more annual expenditure but the same total annual profit.

'What if' investigation 2 - N:\my work\big project\finances 3.xls

The second investigation was to see what would happen if the business had another house. I had to change my formulas for working out the total income from the houses because everything had to be shifted a cell to the right because of the new columns for the new house. I also had to make a new row and formula in the 'income and expenditure' worksheet to work out the annual income from the new house. This would have to be added to the 'total annual income' formula.

This would also have effects in the annual expenditure sections, as the cost of improvements is £3 per week booked and the cost of replacements is £5 per week booked. Due to the new house there will be more booked weeks so expenditure would also increase. New furniture, accessories and other things would have to be brought as well, which will increase the one-time expenditure by £4,250. A new employee would have to be hired to clean and look after the new houses, this would cost £450 more a year.