

Imagine you are working to help improve the business process and the quality management in an IT company. Your knowledge of spreadsheets is to be used to develop a simple Excel Workbook enabling a quick evaluation of the cost of human resources involved in a project.

From your interviews with project managers, you gathered some useful information.

I, The human resource profiles:

You observed that in the company, human resources are classified according to their profile. A profile comprises of:

- ✓ A code (Usually 3 characters in capitals)
- ✓ A description (string of characters)
- ✓ A daily rate (cost of an employee of this profile per day)

Here is the list of the profiles you identified:

- ✓ Analyst Programmer (ANA) costs £ 254.88 per day
- ✓ Architect (ARC) costs £ 408.98 per day
- ✓ Business Analyst (BUS) costs £ 332.6 per day
- ✓ IT Technician (ITT) costs £ 198.06 per day
- ✓ Junior Applications Consultant (JAC) costs £ 220.73 per day
- ✓ Junior Analyst (JAN) costs £ 222.37 per day
- ✓ Junior Architect (JAR) costs £ 364.18 per day
- ✓ Junior Project Manager (JPM) costs £ 359.8 per day
- ✓ Junior Programmer (JPR) costs £ 187.68 per day
- ✓ Project Admin. Support (PAS) costs £ 212.61 per day
- ✓ Program Director (PDI) costs £ 554.92 per day
- ✓ Project Manager (PMA) costs £ 397.03 per day
- ✓ Support Analyst (SAN) costs £ 313.51 per day
- ✓ System Analyst Programmer (SAP) costs £ 296.23 per day
- ✓ Senior Architect (SAR) costs £ 442.39 per day
- ✓ Senior Business Analyst (SBA) costs £ 391.49 per day
- ✓ Senior Project Manager (SPM) costs £ 438.54 per day
- ✓ Senior Technical Consultant (STC) costs £ 426.6 per day
- ✓ Technical Consultant (TCO) costs £ 332.15 per day

II, Human resources of a project:

In general a project manager identifies the tasks to be carried out for the project and he lists the needed profiles, the number of people and the forecast utilisation of each person for that task. For example:

Task		Profile			Number of people	Utilisation in days
Code	Description	Code	Description	Rate		
Cost	Costing of the proposal	PMA	Project Manager	£397.03	1	1
Cost	Costing of the proposal	ARC	Architect	£408.98	1	2
Dev	Development	ITT	IT Technician	£198.06	1	34
Dev	Development	ANA	Analyst Programmer	£254.88	14	65
Dev	Development	BUS	Business Analyst	£332.60	1	20
Dev	Development	JPR	Junior Programmer	£187.68	2	12
Rol	Rollout	SBA	Senior Business Analyst	£391.49	2	7
Sup	Support	JAC	Junior Applications Consultant	£220.73	1	30

III. Simulating the different options

For a project there may be several options and for each one of them the project manager evaluates the cost prices, the possible sell option could be for example:

Task		Profile			Number of persons	Utilisation in days	Cost
Code	Description	Code	Description	Rate			
Cost	Costing of the proposal	PMA	Project Manager	£397.03	1	1	£397
Cost	Costing of the proposal	ARC	Architect	£408.98	1	2	£817
Dev	Development	ITT	IT Technician	£198.06	1	34	£6,734
Dev	Development	ANA	Analyst Programmer	£254.88	14	65	£231,940
Dev	Development	BUS	Business Analyst	£332.60	1	20	£6,652
Dev	Development	JPR	Junior Programmer	£187.68	2	12	£4,504
Rol	Rollout	SBA	Senior Business Analyst	£391.49	2	7	£5,480
Sup	Support	JAC	Junior Applications Consultant	£220.73	1	30	£6,621
							£263,148

Another one could be:

Task		Profile			Number of persons	Utilisation in days	Cost
Code	Description	Code	Description	Rate			
Cost	Costing of the proposal	PMA	Project Manager	£397.03	1	1	£397.03
Cost	Costing of the proposal	ARC	Architect	£408.98	1	2	£817.98
Dev	Development	ITT	IT Technician	£198.06	1	34	£6,734.04
Dev	Development	ANA	Analyst Programmer	£254.88	15	66	£252,331.20
Dev	Development	BUS	Business Analyst	£332.60	1	20	£6,652.00
Rol	Rollout	SBA	Senior Business Analyst	£391.49	2	7	£5,480.80
Sup	Support	STC	Senior Technical Consultant	£426.60	1	30	£12,798.00
							£285,211.00

Finally during one of the interviews, a project manager said "It would really be great if I could play with the different options in order to see what would be the best possible scenarios!". Therefore you had the brilliant idea to propose the following presentation:

Task		Profile			Number of persons	Utilisation in days	OK
Code	Description	Code	Description	Rate			
Cost	Costing of the proposal	PMA	Project Manager	£397.03	1	1	<input checked="" type="checkbox"/>
Cost	Costing of the proposal	ARC	Architect	£408.98	1	2	<input checked="" type="checkbox"/>
Dev	Development	ITT	IT Technician	£198.06	1	34	<input checked="" type="checkbox"/>
Dev	Development	ANA	Analyst Programmer	£254.88	15	66	<input checked="" type="checkbox"/>
Dev	Development	BUS	Business Analyst	£332.60	1	20	<input checked="" type="checkbox"/>
Dev	Development	JPR	Junior Programmer	£187.68	2	12	
Rol	Rollout	SBA	Senior Business Analyst	£391.49	2	7	<input checked="" type="checkbox"/>
Sup	Support	JAC	Junior Applications Consultant	£220.73	1	30	
Sup	Support	STC	Senior Technical Consultant	£426.60	1	30	<input checked="" type="checkbox"/>
							£2

This table enables the manager to simulate the different options he has in mind by ticking and un-ticking the OK column. This example is based on the scenario of the previous page but also enables you to easily come back to the first option.

Work to do

Workbook set up:

- ✓ In a spreadsheet set up the profile list so that it can be search by VLOOKUP using the profile code.
- ✓ In a second spreadsheet plot the daily rates using a bar graph.
- ✓ In a third spreadsheet set up the table enabling a project manager to describe and play with the tasks of the different options he identifies.

Concerning the project description table:

- ✓ Task code and description are simple string columns with no formula.
- ✓ When a profile code is entered the profile description and rate are automatically filled. If no code has been entered both the description and the rate are blank.
- ✓ The number of persons and the duration are entered by the user.
- ✓ If the OK cell is ticked for a task its cost is calculated based on the formula $\text{Cost} = \text{rate}^* (\text{number of persons})^* (\text{number of days})$ otherwise the cell is blank.
- ✓ The Sell price is entered by the user.
- ✓ If the Sell price and the cost price are available and the Sell price is not null then the Margin = $(\text{Sell Price} - \text{Cost Price}) / \text{Sell Price}$ otherwise the margin cell is blank.
- ✓ The Sum of costs is the basic sum of the column (since non active task won't have their cost calculated).
- ✓ The Sum of the sell prices is a conditional sum (only if the corresponding Ok sell is ticked).

Pass

Submit:

- ✓ Microsoft Excel Workbook file (Format: PC, Windows 95 and Microsoft Excel 97, 3"5 floppy disk 1.44MB, virus free). Do not make the file too big, it must fit on one floppy disk.
- ✓ Electronic copy or hard copy of the user guide (see below). If you hand in an electronic version it will be a Word document file (Format: PC, Windows 95 and Word 97, 3"5 floppy disk 1.44MB, virus free). Do not make the file too big, it must fit on one floppy disk, and remember it is a QUICK user guide.

Requirements:

- ✓ The workbook meets the requirements of the subject and the results are obtained by the effective use of Microsoft Excel 97 features.
- ✓ A short user guide presents and explains the use of each aspect of the workbook very clearly and thoroughly so that a novice user would find it easy to use. Besides being designed in a very pedagogical way and it will also show your good understanding of the problem and how this workbook provides a solution.
- ✓ Scenarios have been used to record the two options given as example and two different sets of rates (e.g.: simulate inflation on 5%)

Merit

As for Pass plus:

- ✓ Assignment handed in by the date on the front sheet
- ✓ Formatting and Comments have been arranged so that the overall aspect is neat.
- ✓ Conditional formatting is used to highlight negative margins
- ✓ Spreadsheet protection has been set up in conjunction with cell locking so that the use of the workbook is secured

Distinction

As for Merit plus:

- ✓ Named ranges have been used for computation.
- ✓ Data validation rules have been set to guide the user
- ✓ Views have been set up for navigation in the workbook

IF THE SUBMISSION DEADLINE IS NOT MET THE MAXIMUM GRADE IS "PASS"