Free University of Bolzano Bozen – School of Economics and Management

Information Systems and Data Management 5 exam

# Rules

* + No communication with other people or among students is allowed. Phones and every other means of communication must be turned off. Opening any communication program on the computer is not allowed and is considered cheating.
  + You are responsible for the correct copy of your files.

Enter Windows with your login. You have 45 minutes starting from now.

Copy all the files in **\\ubz01fst\courses\exam\_coletti\YOURNAME** on your Desktop. At the end of each exercise copy here only the files you are required to return, overwriting the original files you have modified.

# Exercise Excel

Open file **medicines.xlsx** with Microsoft Excel 2010 and insheet **List**:

* Insert a new column A with title ID containing odd (dispari, ungerade) numbers, starting from 1 and going up to 9071 (i.e. 1, 3, 5, …);
* in column J insert the logarithm in base 10 of the square root of values in column Price December 2011, rounded to 2 decimal digits;
* in column K insert “increased” for medicines with a price increase between April and December, “decreased” for medicines with a price decrease and a dash otherwise;
* build a scatterplot, with red circle and no line, with price April 2011 on the horizontal axis and price in December 2011 on the vertical axis, with appropriate axes’ titles;
* freeze the top row and hide column E.

In a new sheet with blue tab called **IRR** calculate the internal rate of return for a loan of 1000 € that you receive today and that you pay back with 24 monthly payments of 50 € .

Your company produces

* product A, which requires 9 hours of work, uses 12 Kg of raw materials and is sold for a net profit of 350 euro,
* product B, which requires 6 hours of work, uses 16 Kg of raw materials and is sold for a net profit of 300 euro.

For the next month you must produce at least 200 products, no fractional product can be produced, you have 1500 working hours available and 3000 Kg of raw materials available.

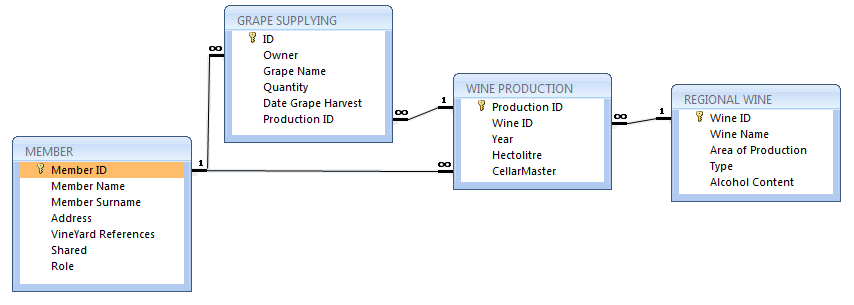
In a new sheet:

* supposing that you produce 80 products A and 120 products B, create a schema to calculate your total profit given the problem's data,
* build next to the schema a small data table to do a sensitivity analysis, showing what happens to the net profit in case of variations with step 20 to the quantity of product A and product B,
* using the Solver, inside your schema find the optimal amount of product A and product B to maximize the net profit.

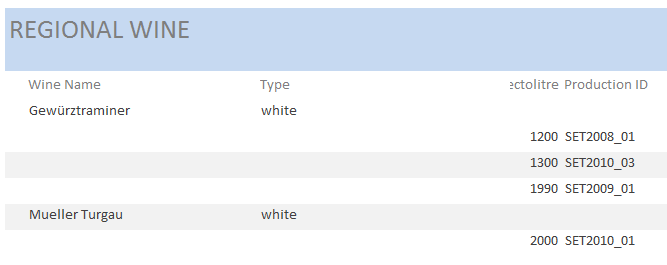
Return file **medicines.xlsx**.

## Exercise Access

Open database **Winery.accdb** and



* insert in table Regional Wine a validation rule with appropriate validation text restricting Alcohol Content to strictly positive values;
* create query **query1** that displays the members of vineyard “Appiano” (fields: Member ID, Member name, Member Surname) with their number of grapes supplied. *Result is only 1 record Annalisa Mair;*
* create report **report1** showing the fields displayed in the picture, wine by wine sorted by hectoliter, considering only “white” wines with productions between 1000 and 10000 hectoliters.



Return file **Winery.accdb**.