Free University of Bolzano Bozen – Faculty of Economics and Management

Information Systems and Data Management 27006 exam

# Rules

* + No communication with other people or among students is allowed. Portable communication devices 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 the exam copy here only the files you are required to return, overwriting the original files you have modified.

## Exercise Excel

Open file **gasoline\_stations.xlsx** with Microsoft Excel 2016 and

in sheet **stations**

* sort the data by **Province** A to Z, then by **Town** A to Z, then by **Date** newest to oldest;
* in columns L insert, in percentage format with two decimal digits, the probability of having that row’s **Latitude** from a normal distribution with μ=43 and σ=4;
* insert in a new sheet a pivot table, like the one in the picture, with the provinces and towns and their average latitude and longitude.

In sheet **Second**

* insert in column B the value z for which the area from –∞ to z under a normal distribution with μ=3 and σ=16 is equal to the value in column A;

In Sheet **Third**

* remove the hyperlinks.

In a new sheet set up a solver to minimize the cost of your daily diet using these types of food eating at least 500 calories, 6 grams of chocolate, 10 grams of sugar and 8 grams of fat.

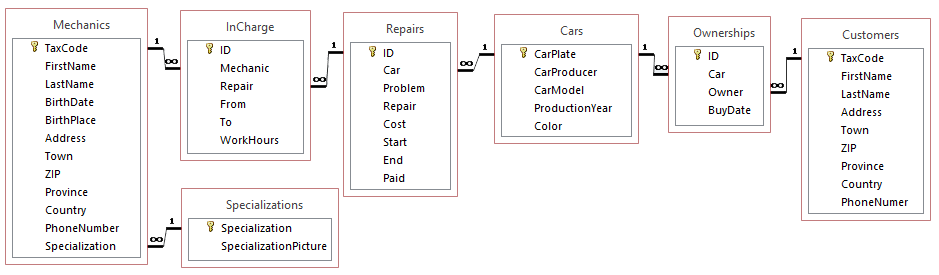
|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Brownies** | **Ice cream** | **Cola** | **Cheese cake** |
| **Calories** | 400 | 200 | 150 | 500 |
| **Chocolate** | 3 | 2 | 0 | 0 |
| **Sugar** | 2 | 2 | 4 | 4 |
| **Fat** | 2 | 4 | 1 | 5 |
| **Cost** | 0.50 € | 0.20 € | 0.30 € | 0.80 € |

**TURN PAGE** 🡪

* In a new sheet calculate the internal rate of return for a debt of 1000 € to be returned in 12 monthly payments of 30 € for the first month, 40 € for the second one, 50 € for the third one and so on.
* Insert a VBA function called **checkThis** which accepts as input a number and a text. It returns 1 when the number is positive and the text is equal to “highway”, spelled with all the possible capitalizations, otherwise 0. Test the function on sheet **stations** in column M using **Latitude** and **Type**.
* Save the file as Macro-enabled Workbook **gasoline\_stations.xlsm**. Do it now!
* Set decimal separator to dot and import text file **develop.txt** into a new sheet.

## Exercise Access

Open database **CarWorkshop.accdb** with Microsoft Access 2016 and



* create query **query1** that displays mechanics, the repairs they are in charge of which cost at least 100 € and the difference between **Start** and **End** fields. Display only fields: **FirstName**, **LastName**, Repairs’ **ID**, **End** – **Start**;
* create query **query2** that displays from tables Customers and Ownerships the customers with a car with **BuyDate** in December of any year, sorted by **Town** and then by **Address**, with only these fields and exactly in this order: **FirstName**, **LastName**, **Address**, **Town**;
* create query **query3** that displays for each car the total amount of hours calculated from table **InCharge** as the difference between **From** and **To** fields. Display only fields: **CarPlate**, difference.

## Save and return:

* **gasoline\_stations.xlsm** (or **gasoline\_stations.xlsx** if you have not done VBA exercise)
* **CarWorkshop.accdb**