## Lab-session 4

- 1) Design a user defined function which distributes people into five different age groups: Group I (1-10), Group II (11-18), Group III (19-30), Group IV (31-45), Group V (46-65) and GroupVI (people older than 65)
  - a) Write th UDF in such a way that it computes the age up to now when the birthdate is given in some cell. Use the information to determine to which age group the person belongs using an IF-structure. The return value of the function should be a string containing "Group #".
  - b) Use once more the part of the program structure of a) which computes the age of a person up to now given the birthdate in some cell. Instead of usinf an IF-structure use now an HLOOKUP table to determine the age group. The return value of the function should be a string containing again "Group #".
- 2) Write a user-defined function which returns the appropriate greeting depending on the time.

09/11/1989	11:23	Good Morning!
		Good Evening!
		Good Afternoon!
		Good Evening!
		Good Night!

Sample input and output for the UDF "hello".

- a) Use the VBA-function "Hour" to obtain the hour from a date/time entered into some particular cell. Call your function "hello1". When the time is 0:00-12:00 your function should return "Good Morning!", for 12:00-18:00 it should return "Good Afternoon!", for 18:00-22:00 it should return "Good Evening!" and for 22:00-23:00 it should return "Good Night!".
- b) Write now a new function called "hello2" which is more suitable for winter time. When the time is 0:00-12:00 your function should return "Good Morning!", for 12:00-16:00 it should return "Good Afternoon!", for 16:00-21:00 it should return "Good Evening!" and for 21:00-23:00 it should return "Good Night!".
- c) Write a new function called "hello" which uses the autumn-winter greeting "hello2" from November to April and otherwise "hello1".
- 3) Modify further the worksheet from Lab-session 2 task 4 and Lab-session 3 task 1. Design a user-defined function which determines whether a certain element is an inert gas (atomic numbers 2,10,18,36,54,86), a non-metal (atomic numbers 1,6-9,15-17,34,35,53,85), a metalloid (atomic numbers 5,14,32,33,51,52,84) or a metal (all remaining atomic numbers). Just entering the symbol for some element your function

should produce a sentence stating the full name and its characteristic. For instance

Input: "He"  $\rightarrow$  Output: Helium is an inert gas.

## Instructions:

- The input variables for the function should be a string containing the name of the element and the range for the lookup table.
- Use a VLOOKUP table to determine the atomic number corresponding to the symbol of the element.
- Design an IF-structure which, depending on the atomic number, produces a string containing the characteristic information about the element.
- Use a further VLOOKUP table to determine the full name of the element corresponding to the symbol.
- Finally produce a complete sentense for the output value from the name of the element and the characteristic information. (Recall Lab-session 3 task 5 for this.)