Decision Models (valid for the final exam)

Homework #3 (Three-Way Decisions through RST)

Requests:

1. Implement a Python package (3WD package) containing all the functions needed to execute the Three-Way Decisions approach (based on Probabilistic Rough Sets) on Decision Tables provided as CSV files.
2. Choose a suitable and interesting dataset from a repository on the Web.
3. Design a data analysis method (choose goals, conditional attributes and decision attributes) based on Sequential Three-Way Decisions to process the selected dataset.
4. Write a Python program (main script), invoking your 3WD package, to process the selected dataset by using the defined method.
5. Write a document describing all the previous steps (also the parameter values) and discuss the analysis results showing their usefulness and how a decision maker tries benefits from them.

Hints

- Step 2 and step 3 are very important.
- The 3WD package must be generic (it provides Three-Way Decisions on any Decision Table organized as a CSV file.
- The Main Script can be specific for the dataset you have selected.
- The "sequential" part of the work can be implemented in the Main Script by writing a specialized function.

Python tools

- You can use Pandas, NumPy and other Python libraries you consider effective to achieve the goal.
- Use Spyder (in the Anaconda package) to write the program. You must create a Spyder Project.

Submission

- Send the solution files (in the Spyder Project – including the project description document) to the teacher by using Microsoft Teams (Activity).

Happy coding and analyzing!