**Benders Decomposition**

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**In-class and outside class exercise week 04/07/2020 – 04/09/2020**

1. Go to Canvas and run the AMPL files I created for solving Heart Guardian problem as **if not using Benders Decomposition**
2. Create a subfolder named Benders suproblem. Code in it the model for the Benders subproblem given in Definition 13.19 for Heart Guardian and generate the corresponding data file. I assume you read pages 842-848 and you have fresh in your mind the table of signs for the dual variables of a given primal problem studied in IE 3340. Continue using the sets, param, etc. style in AMPL; **do not hard code the numbers for the matrices in AMPL in a rudimentary type of program**
3. Create a subfolder named Benders partial master problem. Code in it the model for the Benders partial master given in Principle 13.21 for Heart Guardian and generate the corresponding data file. **Do not hard code the numbers for the matrices in AMPL in a rudimentary type of program**
4. By editing the data files as needed over the iterations and saving them with different names reproduce the solutions given by the Benders Subproblem and Partial Master Problem in Rardin Table 13.6