

# Decision Sciences

## *Exercise Linear Programming - Portfolio planning problem*

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### **Problem description**

Ghent Savings has €20 million available for investment. It wishes to invest over the next four months in such a way that it will maximize the total interest earned over the four month period as well as have at least €10 million available at the start of the fifth month for a high rise building venture in which it will be participating.

For the time being, Ghent Savings wishes to invest only in 2-month government bonds (earning 2% over the 2-month period) and 3-month construction loans (earning 6% over the 3-month period). Each of these is available each month for investment. Funds not invested in these two investments are liquid and earn 3/4 of 1% per month when invested locally.

- a) Formulate a linear program that will help Ghent Savings determine how to invest over the next four months if at no time does it wish to have more than €8 million in either government bonds or construction loans.
- b) Analyze the sensitivity report.