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Cortex
ANALYTICS SIMULATION

A Simulation Game to Learn Predictive Analytics

Fundraising scenario

http://erpsim.hec.ca

ERPsimLab
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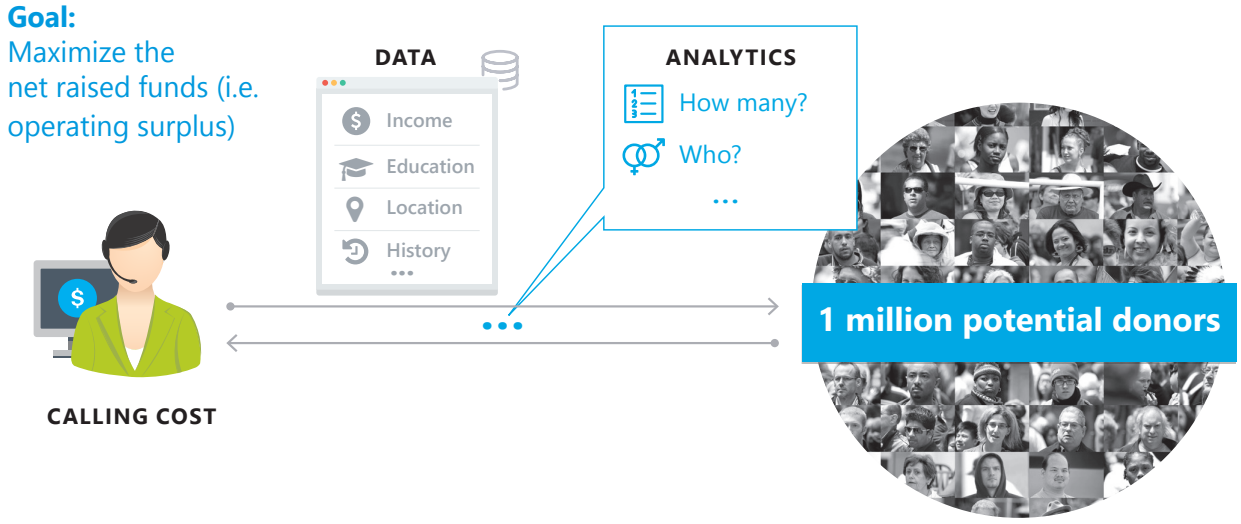
Serious games to learn enterprise systems and business analytics

Game's scenario

You will be working on a fundraising campaign for a 12-year old, not-for-profit charitable organization (foundation) with a million members. The foundation has decided to add a direct contact campaign to its list of marketing activities. You will be using a predictive modeling software (SAS Enterprise Miner or SAS Visual Data Mining and Machine Learning) to predict how many and which individuals to target in the campaign. The objective is to fundraise the most in donation amount given the costs of calling members (sum of predicted amount given minus costs).

You will be provided with the dataset of potential donors, and pre-built diagrams in the software, which will fit models based on previous behavior of donors (if they gave or not or how much they gave) and will also score donors to predict this year donation. The list of scored donors will be exported to an output file/report.

Using this output, you will have to decide how many potential donors to target and will have to create a list of IDs of those potential donors. You will have to upload/submit the created list to the platform which will rank the submissions based on **operating surplus – i.e., sum of donations minus the total cost of calling.**



Available information

In order to play the game and make decisions, you will have access to a dataset of 1 million potential donors as well as the costs associated to calling them (given to you by your teacher):

Table 1 Members' Data (please see table 3 for a full list of variables)

Category of data	Example
Membership activity (historical info)	Minimum, maximum, & total donation, …
Demographic data	Age, Gender, …
Socioeconomic status	Salary, education…
Previous behaviour (last year & this year)	If members gave and how much

Table 2 Example of a Cost Schedule*

Number of contacted members	Cost per person
0 - 60,000	5$/person
> 60,000	25$/person

** Please note that the cost schedule could vary from game to game. Make sure that you are using the correct cost schedule communicated to you by your teacher.*

Table 3 List of Variables

Variable Name	Description	
ID	Member number (unique ID)	ID data
LastName	Last Name	
FirstName	First Name	
Woman	Sex (1=woman, 0=man)	Socio-demographic
Age	Age (years)	
Salary	Annual salary in USD	
Education	Highest education level	
City	Type of neighborhood	
SeniorList	Seniority for being on the VIP list	History*
NbActivities	Number of participations to annual meeting	
Referrals	Number of referrals	
Recency	Number of years since last gift	
Frequency	Number of donations	
Seniority	Number of years since first donation	
TotalGift	Total donation since a member	
MinGift	Minimum donation since a member	
MaxGift	Maximum donation since on the VIP list	
Contact	Direct solicitation this year (Only applicable to Round 2)	
GaveLastYear	Whether or not the individual gave last year	Target
AmtLastYear	Amount given last year	
GaveThisYear	Whether or not the individual gave this year	
AmtThisYear	Amount given this year	

*** History (HIST) dataset gives the history of 10 years leading up to, but excluding, last year.**