MSc Computing OO Design and Programming

1st Coursework
Hand in by the 3rd November at the SGO

in groups of **up to five** students

The following describes loans for the purchase of cars:

i) A person has a name, an address and an age. A person may be working for one or more, but for no more than three companies. A person receives a salary from each company he/she works for. The disposable income of a person is the sum of all salaries received divided by their age and then decremented by a tenth of the sum of the prices of all the cars owned by this person.

ii) A car has a number plate, a horsepower, and a mileage. A car may be owned by a person, a company or a bank. The price of a car is its horsepower multiplied by 10000 and then divided by the mileage.

iii) A company has a name, an address, and a turnover (i.e. money received before paying the employees). The disposable income of a company is calculated as its turnover, decremented by the salaries of all employees.

iv) A bank has a name, an address and an interest rate.

v) Companies or people may apply to a bank for a loan to buy a car.

vi) The bank grants the loan to a person, if the person's disposable income exceeds the price of the car multiplied by the interest rate. The bank grants the loan to a company if the company's disposable income exceeds the price of the car multiplied by the interest rate.

vii) When a person or company receives the grant of a loan, then he/she/it sends back a letter of acceptance.

Draw an UML class diagram describing the above. Indicate the type of the attributes, and the types of the arguments and results of the operations. Note: Not *all* aspects of the above situation can be expressed in the UML class diagram.

Submission: Please, form groups of up to five students, and write ALL NAMES on the submission.