CENG 211

PROGRAMMING FUNDAMENTALS

HOMEWORK-1

Due Date: 20 October 2017, 23:55

There are three different vehicle insurance companies: CompanyA, CompanyB, and CompanyC.

Each vehicle has following features:

- brand and model,
- name of the owner.
- produced year,
- horsepower(hp),
- accident penalty (ratio of number of responsible accidents(a) out of total number of accidents(b)).

→ There are three different vehicle types: CAR, BUS and MOTORCYCLE. These types should be stored as an ENUM.

→ Insurance cost of each vehicle is calculated according to **decision table** given below.

Decision Table for Insurance Cost

	Car		Bus		Motorcycle	
Year	$1000/2^{age}$		$2000/2^{age}$		$500/2^{age}$	
HP	HP*$10		HP*$10		HP*$3	
Accident Penalty	Age<3	Age>=3	Age<5	Age>=5	Age<1	Age>=1
	(a/b)*200	(a/b)*100	(a/b)*400	(a/b)*200	(a/b)*100	(a/b)*50

Insurance Cost = x * year_cost + y * hp_cost + z * accident_penalty

	x (year_cost_weight)	y (hp_cost_weight)	z (accident_penalty_weight)
CompanyA	0.7	0.3	0.3
CompanyB	0.3	0.3	0.4
CompanyC	0.2	0.2	0.6

→ Your Java application should read vehicle information from the file named **"vehicles.dat"**. Then, calculate each company's insurance cost offer.

→ You should use **ArrayList** for storing vehicles that you read from the file.

NOTES:

- You should not change the given .dat files and test cases.
- Make sure your code passes the given test cases.
- You will be evaluated according to these test cases and object oriented design.
- Make sure you follow naming convention rules.

SUBMISSION RULES:

- You should create your Java project as **ID1_ID2_HW1** and export as **ID1_ID2_HW1.zip**
- You should upload your zip file **ID1_ID2_HW1.zip** to the CMS.
- One of the group members is sufficient to upload homework to the CMS.

You should add an author comment to the top of each class that you implement.