

Exercise 1

Match the operations to the concepts they refer to.

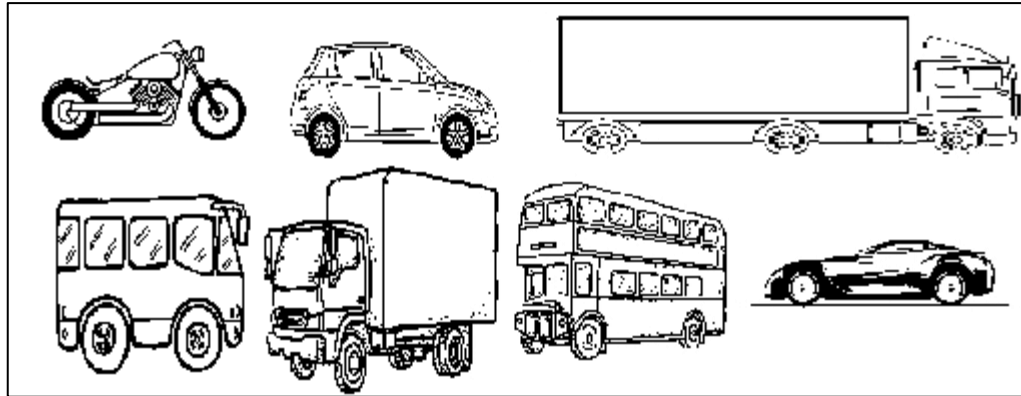
Proposition		Concept	
1	Carnivores hunt and eat their prey. To hunt and to eat are.	A	Attributes
2	The social security number, last name, first name, and address of a social security beneficiary constitute his/her...	B	Inheritance
3	A pen, a schoolbag, a book are...	C	Abstraction
4	A whale is a mammal. This link is a...	D	Class
5	Every animal eats. A carnivore eats differently from a herbivore. This phenomenon is called...	E	Operations
6	The lion, the tiger, and the wolf are carnivores; they form a	F	Objects
7	The electrocardiogram is a representation of cardiac function; it is a..	G	Polymorphism

Solution :

Proposition	Concept	Explanation
1. Carnivores hunt and eat their prey. To hunt and to eat are...	E – Operations	"Hunt" and "eat" are actions or methods performed by carnivores.
2. The social security number, last name, first name, and address of a social security beneficiary constitute his/her...	A – Attributes	These are properties or data fields describing the beneficiary.
3. A pen, a schoolbag, a book are...	F – Objects	These are instances of classes (e.g., pen object, book object).
4. A whale is a mammal. This link is a...	B – Inheritance	The whale inherits the characteristics of the mammal class.
5. Every animal eats. A carnivore eats differently from a herbivore. This phenomenon is called...	G – Polymorphism	Different implementations of the same operation "eat."
6. The lion, the tiger, and the wolf are carnivores; they form a...	D – Class	They are members of the same class: "Carnivore."
7. The electrocardiogram is a representation of cardiac function; it is a...	C – Abstraction	It's a simplified model or representation of a real system.

Exercise 2

Consider the following image:



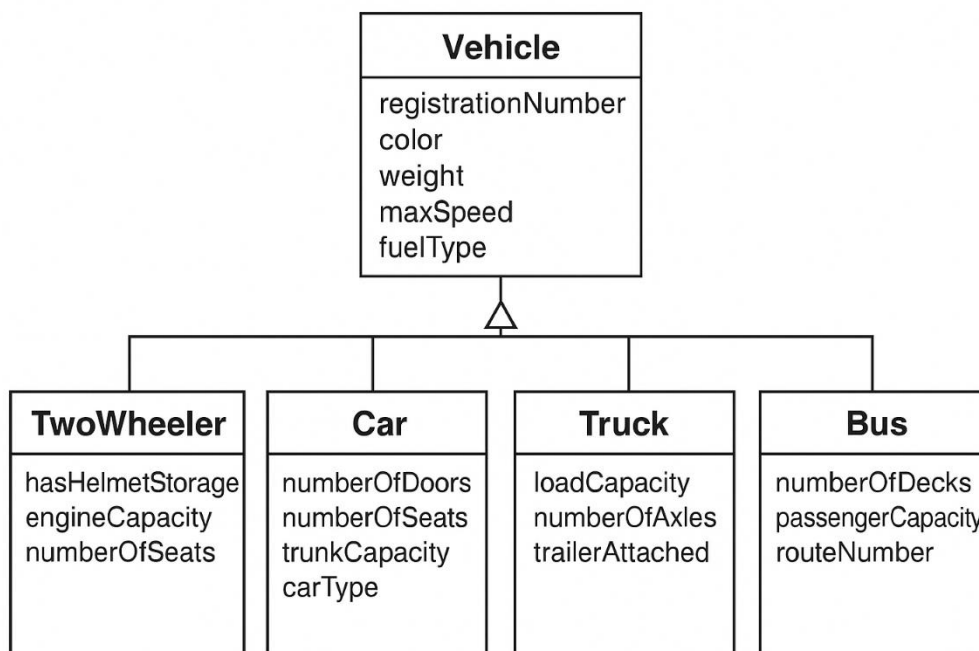
1. Find all the objects contained in this image.
2. Group the identified objects into classes.
3. Propose attributes for each identified class.
4. Represent the different classes using inheritance relationships.

Solution :

1. We can identify the following **objects**:

- One Motorcycle,
- two cars,
- two Trucks (semi-trailer),
- two Bus

2. 3 4:



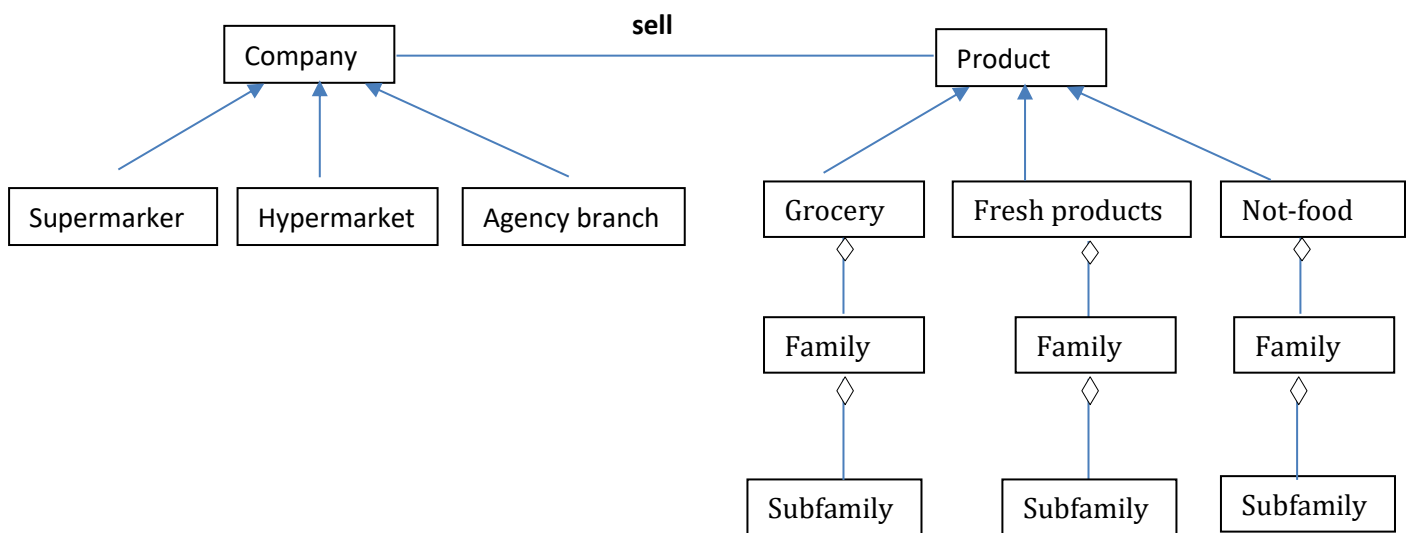
Exercise 3

A company manages branches, supermarkets, and hypermarkets. It sells a certain number of products grouped into three main divisions: Grocery, Fresh products, Non-food items. Within each of these divisions, the products are grouped into families, which are themselves divided into subfamilies (e.g., textiles, haberdashery, etc.).

Task:

☞ Identify the classes and their relationships.

Solution :



• Or

