

Objectives : Learn how to identify Objects, Classes and Properties

Work with another student to find answers together to these questions. If you have doubts check with your Tutors. After you have found the solutions, attempt the given Tutorial Quiz where you individually have to submit your answers.

Exercise 1 – Noun Verb Analysis

Consider the following scenario. Do the Noun Verb analysis to identify the classes in the description.

An Online ¹bookshop ⁵sells different things. Currently it has ⁵books, ⁵magazines and ⁵CDs. All these products have some common types of information such as ⁵price, ⁵title etc.. Also each ⁵product may have specific information such as ⁵author, number of pages, ⁵artists, type etc..).

The ⁵registered customers can ⁵place ⁵orders for ⁵products. The ⁵ordered products ⁴are usually ⁵delivered together, but sometimes several ⁵shipments are ⁵needed when ³the store runs out of ³products for a while. An ³order may contain several ³products.

The ³products are ⁵delivered to ⁵personal customers and ⁵payments are ⁵done at ⁵the delivery. The ⁵business customers will get their ⁵orders directly, and they will be ⁵sent an ⁵invoice afterwards. Both customer types can ⁵make the payment also by using ⁵credit card. When registering, a customer is prompted to ⁵give ⁵contact and personal information needed for authentication, delivery of ⁵orders and invoicing.

The ³bookshop system ⁴must be able to ⁵add and ⁵remove ⁵customers, add ⁵new products and ⁵view/update existing ⁵products, ⁵make or ⁵remove ⁵orders and ⁵view existing ⁵orders, view and ⁵generate ⁵reports on the ⁵products.

Do the Noun Verb analysis to identify the classes in the description.

- (a) Identify all the Nouns which can be potential classes
- (b) Identify the set of potential classes, show clearly how the nouns were rejected using the 5 rules.

books
 magazines
 CDs
 products
 registered customer
 order
 Shipments
 Personal Customer
 General customer
 business customer
 invoice
 Payment
 report

(From 2018 – June Paper)

5 Rules :-

- 1.Redundant
2. event or an action
- 3.outside scope of system
4. Meta language
- 5.An attributes

Exercise 2 – Noun Verb Analysis

Consider the following scenario. Do the Noun Verb analysis to identify the classes in the description.

outside scope of system

Attributes

A **supermarket** sells many types of **items**. Each item has an **item code, description, price and stock levels**.

ATTRIBUTES

The **supermarket** has **loyalty card** that captures the **customer** details such as **Name, mobile No, points collected**. **Points** are Added when a **customer** makes a purchase and Deducted when the customer uses the points.

ATTRIBUTES

The **invoice** of the **customer** contains the **customer name, points obtained, the items purchased**. The calculated amount is also shown.

A **cashier** in the **supermarket** handles the billing. A **Manager** in the supermarket also uses the system to authorize changes to the **invoices**.

Do the Noun Verb analysis to identify the classes in the description.

- Identify all the Nouns which can be potential classes
- Identify the set of potential classes, show clearly how the nouns were rejected using the 5 rules.

items
Loyalty Card
Customer
Invoice
Cashier
Invoices
Manager

Exercise 3 – Identify Properties

The software system is supposed to manage information about Employees. Employees can be of two categories, namely Permanent Employees and Contract Basis Employees. An Employee has a **name, address, phone number and an employee id**. A Permanent Employee has a **name, address, phone number, employee id and basic salary**. A Contract Basis employee has **a name, address, phone number, Employee id, hourly rate and hours worked**. At the end of the every month, the system must calculate the **total payments** for each Employee.

The company sells products such as Milk powder, liquid milk, yoghurt and butter. Ajith is a Permanent Employee who received an allowance (30% of basic salary) for last month as he met with his targets in selling more than 10000 packs of Milk powder last month.

Read the scenario described above and Identify the properties for the following classes.

- a) **Employee**
- b) Permanent Employee
- c) Contract Employee

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Exercise 4 – Identify Objects and Classes



- Identify the Objects in the above Picture
- Group these Objects into Classes

Now submit your answers by answering the Tutorial 04 Quiz individually. If you have very different Objects and Classes please check with your Tutors.