

SWEN 223: Software Engineering Analysis

Assignment 1

Submit by 07/04/2017

1 Cash Register System

Imagine you are a designer within a software company and are asked to design a new cash register system for the “BUNDLE’nBANK” supermarket. In this and the following assignments, you will create diagrams that help with the analysis, design and validation of the software for the cash register system.

1.1 Functionality

Basic requirements for the cash register system include

- recognising an item, e.g. by its barcode.
- adding an identified item to a list of sold items.
- calculating intermediate and totals sums for sold items.
- printing a receipt, listing sold items together with the total and GST sums.

1.1.1 Further Functionality

What other functionality can you think of? What are variabilities, e.g., regarding scanning or payment? What are exceptional situations which must be supported by a cash register? Could you help the supermarket manage its item store? Could you help the supermarket to attract patrons? In what way could the cash register functionality support these and potentially other tasks?

1.2 Use Cases

Create a use case diagram for a cash register, including the functionality you have identified in 1.1.1 for cash registers. We expect you to use the ArgoUML tool to create the diagram. If you use a different tool, explain your tool choice in notes accompanying your submission. In any event, make sure that your diagram complies to the official UML syntax.

Hint: Remember that a use case typically consists of a sequence of steps that lead to a concrete value for the actor. Do not include small steps like “*add item to receipt*” as a use case of their own.

1.2.1 Actors

Make sure to reflect on the different kinds of personnel who is going to use the cash register for different purposes and how this should be represented with various actors. For full marks, use more than one actor.

1.2.2 Use Case Relationships

Relate (sub-) use cases to each other using the relationship types discussed in the lecture. For full marks, attempt to incorporate each relationship type supported by the UML.

1.3 Submission

Submit your use case diagram via the electronic submission system. You may accompany it with extra documentation (in a .txt file or as part of the diagram) elaborating on assumptions made, explanations regarding your tool choice, as to how the tool you have used may have been limiting you, etc.

<p>Note: Allowed submission formats for diagrams are PDF documents (.pdf), image files (.png, .gif), or Postscript document (.ps). For accompanying elaborations, please use a plain .txt file. Other formats cannot be considered and will unfortunately have to be counted as non-submissions.</p>
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