Web Engineering
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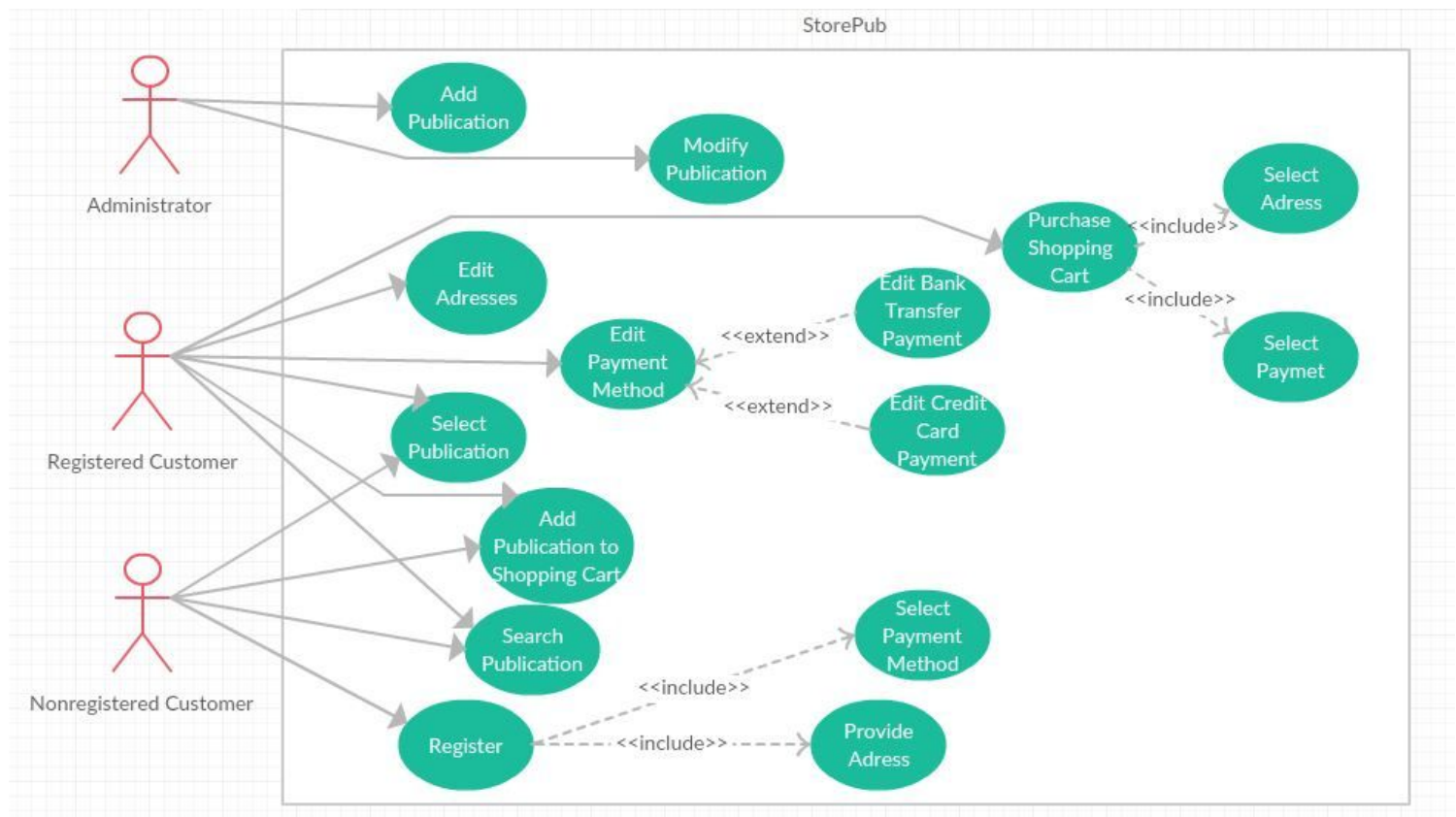Rinku Kanti Chowdhury (rinkuchowdhury@uni-koblenz.de)

Assignment 3_solution

Exercise 1: **Architectural Styles**

a. Topologically, layered architecture and MVC can be considered as similar architecture apart from their architectural processing path. layered architecture is linear where MVC is triangular. Both architectures may reside on the same physical computer (same tier) but with logical separation of components. However, the components of each layer communicates with the components of other layer by well defined interfaces and that communication between layers for both architecture is explicit and loosely coupled. The responsibilities of Model layer is similar to Data Layer. Accordingly, View Layer and controller is same as presentation and application layer respectively.

b.

c. **Coupling** : A relation of two components that depend on each other for successful execution. Low coupling is good as it helps future maintenance of components. Otherwise if it is high coupling then in case of modifying one component will have effects to modify other components.
Cohesion: A relation of elements within a component that has a single purpose or function. Highly cohesion component easy to reuse to deliver its own purpose.

d. Model-view-controller uses the Observer pattern. In the Observer Pattern an object (subject), maintains a list of its dependents, so-called observers, and notifies them automatically of any state changes, usually by calling one of their methods. The Observer Pattern is used twice in MVC. The first use is to notify the View Component of any data that has changed in the Model Component. The second is to notify the Controller Component about the cursor actions in the View. In accordance to the pattern, subjects are created in the Model and the View while observers are respectively in the View and Controller. Upon data/cursor changes methods in these components are called to realize an update to the state of the application.

Exercise 2:

a)

b)