

Object-Oriented Analysis & Design:

Specification of Story Management System (SMS)

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1. A Newspaper House publishes daily newspaper and wants to manage its activities through a **Story Management System (SMS)**. You are to develop the **SMS**. The requirements specification of the system is given below. Read the specifications carefully, analyse the requirements, and design the following aspects of the system using UML and DP.
 - (a) Identify the use-cases and design suitable Use-Case Diagrams for **SMS**. Highlight the relationships amongst the actors and the use-cases.
 - (b) Design Class Diagrams for *Story*, detailing the attributes and operations with their properties.
 - (c) Show the State-chart Diagram for a *Story* as it passes through the **SMS**.
 - (d) Show all other classes / objects (in addition to Question 1b) by brief Class Diagrams (with name and key attributes). For the entire collection of classes (that is, including *Story*) show the associations, aggregations/compositions, generalization/specialization, and abstract/concrete etc.
 - (e) Design suitable Sequence Diagrams for use-cases arising from *Submit* (of *Reporter*), *Review* (of *Manager*), *Revise* (of *Reporter*), and *Approve* (of *Manager*) actions.
 - (f) Choose appropriate Design Patterns for your design. Briefly justify your choice.

Requirements Specification for Story Management System (SMS)

- (a) The staff structure of the Newspaper House is as follows:
 - *Editor*. The *Editor* is responsible for the overall activities and directly manages the *Editorial Division*.
 - *Associate Editors*. Every *Associate Editor* is responsible for a *Division* and reports to the *Editor*. No *Associate Editor* manages more than one *Division*.
 - *Reporters*. Every *Reporter* works for a *Division* and reports to the corresponding *Associate Editor*. *Reporters* working for the *Editorial Division* reports directly to the *Editor*.

Every employee is identified by the *Employee Code*, and has *Name*, *Email* and *Mobile Number*.

- (b) The Newspaper House has 3 *Divisions*:
 - *Editorial Division*: This publishes the *Editorial* expressing the views of the Newspaper House, *Special News Items* and the *Letters from Readers*.
 - *News Division*: This publishes stories on national and international news. A story here is political, social or economic in nature.
 - *Features Division*: This publishes national and international feature stories in art, culture, cinema, sports, and the like. A story here is an entertainment event report, critique, celebrity interview, match report, team analysis, or statistics.

Every *Division* has a *Manager*. With the exception of the *Editorial Division*, every *Division* is managed by an *Associate Editor*. The *Editorial Division* is managed directly by the *Editor*.

- (c) At the Newspaper House a *Reporter* needs to:
 - *Collect*: A reporter goes to places or liaison with external agencies to collect news items.

- *Compose*: A collected news item is cast in the form of a story.
 - *Submit*: A completed story is submitted to the corresponding *Manager*.
 - *Revise*: Up on review, if the *Manager* desires, the story is revised and re-submitted.
- (d) At the **Newspaper House** the responsibilities of an *Associate Editor* include all responsibilities of a *Reporter*. Naturally she / he can report their own stories. In addition, an *Associate Editor* needs to:
- *Review*: A story submitted by a reporter (of the *Division*) needs to be reviewed and edited. Up on review, the *Associate Editor* may request the *Reporter* to revise and re-submit.
 - *Approve*: A submitted story may and may not be approved – with or without revision.
 - *Paginate*: Compose the day's page/s with the approved stories of the *Division*.
- (e) At the **Newspaper House** the responsibilities of the *Editor* include all responsibilities of an *Associate Editor* (and hence those of a *Reporter*). In addition, the *Editor* needs to:
- *Edit*: Manage the *Editorial Division*, write the editorial, and set & comply with the policies for the **Newspaper House**.
- (f) A *Story*:
- Is a piece of text for publication in the newspaper.
 - Has title, place, date-time, sources (optional), and reporter / associate editor (optional).
 - Is of a type that matches the *Division* in which it is published.
 - Has a nature as specified above under different *Divisions*.
- (g) The *Work flow* in the **Newspaper House** is as follows:
- A *Reporter* collects a news item from primary lead, secondary agency or continuity of events. She / he explores the details and prepares the facts.
 - The *Reporter* then composes the facts in terms of a *Story* filling in the necessary and auxiliary parts.
 - Once composed, the *Reporter* submits the *Story* for review.
 - The *Manager* of the *Division* retrieves the submitted *Story* and takes one of the actions as follows:
 - Review & edit and approve the *Story* for publication.
 - File review comments on the *Story* for the *Reporter* (who wrote the *Story*) to make revisions. The *Reporter* then revises the *Story* and submits again for review.
 - Review and disapprove the *Story*. This *Story* will not be published.
 - Once the cut-off time for the day is over, the *Associate Editor* of the *Division* will preview the approved stories and prepare the page/s for the *Division*. Stories selected for a day during pagination are marked published and will not be selected again. Other stories continue to remain in **SMS** for possible publication in future.
 - The *Editor* reviews the page/s for compliance to the policies of **Newspaper House**. If a *Story* is found to be non-compliant, the *Editor* may ask the corresponding *Associate Editor* to revise or replace the *Story*.
 - Once all stories become compliant, the *Editor* adds the *Editorial* and orders publication.
 - The newspaper goes to press.

Every action in **SMS** generates notification (by email) to all concerned stakeholders.