NOTIZO A NEWS PLATFORM USING OOP

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Introduction

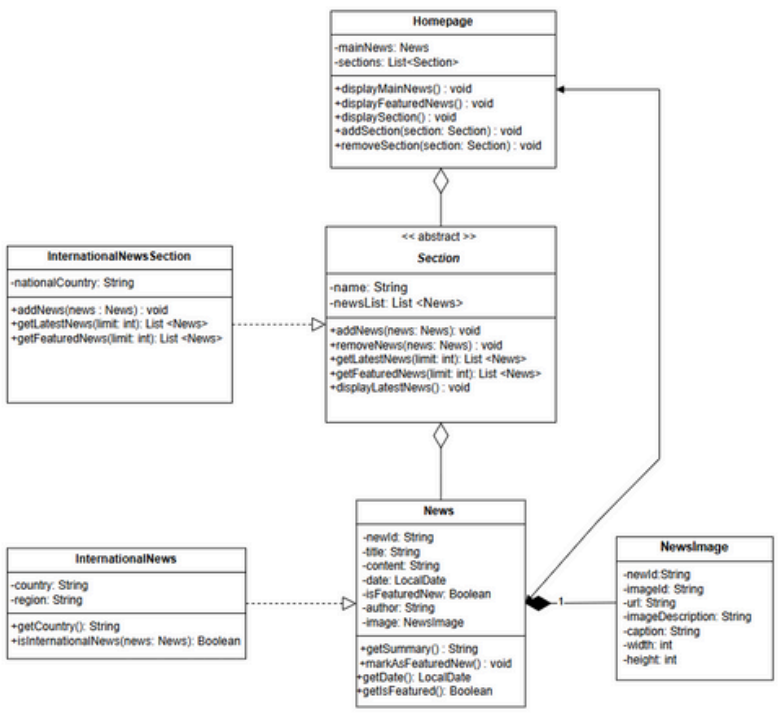
In the Internet era, traditional journalism has transformed into digital journalism, using the Internet to reach global audiences instantly. This new environment offers navigation through links and immediacy with constant updating. However, this change presents several problems to be addressed, robust and efficient digital platforms are required to replicate the functionality of an online newspaper and meet expectations. Critical needs arise such as scalability for an increasing volume of content, intuitive navigation, a modular and maintainable code base, adequate data protection, and efficient organization of content.

Goal

Keep the user informed through easily accessible news, find news by classification to make the search easier, offer comprehensive and detailed reports on relevant topics.

Proposed Solution

Our solution proposes the NOTIZO digital news platform with a modular object-oriented architecture designed to address the requirements of content delivery, intuitive category navigation and long-term maintenance and for this purpose the design employs SOLID principles (such as encapsulation, inheritance, polymorphism and composition), This ensures clear, flexible and scalable code that meets these requirements by allowing sorting and filtering, facilitating search through specialized sections and with its graphical user interface that implements Java Swing, ensures intuitive and accessible navigation, with a clear separation of responsibilities ensuring the quality of the system.



Experiments:

To demonstrate the effectiveness of NOTIZO a series of specific experiments:

EXPERIMENT	VERIFIES	THROUGH
CORE FUNCTIONALITIES	organization, classification and updates	general test
NON-FUNCTIONAL DESIGN QUALITIES	reviewing class responsibility, modularity and flexibility	code audits and unit tests. modifing functionalities

Results:

NOTIZO effectively fulfills its goal of providing a functional and well-structured news platform, serving as a practical example of the application of OOP and SOLID principles in software development.

FEATURE	NOTIZO	OTHER SOLUTIONS
DESIGN AND MAINTAINABILITY	Modular with OOP and SOLID principles, which facilitates the addition of new functionalities and maintenance	Excessive dependencies, rigid code, difficult to maintain
LAYER SEPARATION	Strict separation of responsibilities (GUI, Business Logic, Data Model)	Presentation and business logic are often intertwined.
FLEXIBILITY	Highly extensible and adaptable through inheritance and polymorphism.	Hardcoded and rigid solutions, difficult to modify or extend
CLARITY OF THE CODE	Single Responsibility Classes (SRP), promoting readable, easy-to-understand code	Flat data structures or no clear responsibilities, leading to confusing code

Conclusions:

NOTIZO meets its goal of keeping the user informed in an easy and accessible way, through an intuitive interface. Through a modular architecture based on SOLID principles, it demonstrates how object-oriented programming (OOP) addresses scalability and maintainability challenges. Although it is an academic prototype with volatile memory storage and some limitations, its design validates the applicability of OOP for building scalable and adaptable platforms.

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