* Description for Back-End

Back-End subsystem is system that continuously crawl news feeds from the Internet, extracts good quality information and updates the database. It also updates the statistics information in the database periodically. More generally, the Back-End updates all kinds of data in the database periodically in an efficient way. The Back-End establishes TCP connections from the Front-End, enabling the Front-End able to control the Back-End in a remote way.

* Pattern that Back-End uses

The Back-End does not use existing software design patterns. It uses a pattern developed by Shiwei Zhang named "independent module pattern".

* Independent Module Pattern

Unlike traditional module pattern, a module is not a Singleton but a class inherited from a module prototype which consists of common components and interfaces. All modules are managed by a master class and can be dynamically loaded or unloaded, and run in their own threads.

* Advantage

1. Allows multiple instances of a module.
2. Allows efficient data sharing if needed.
3. Running modules using less memory due to thread (a light-weight process).
4. Easy to manage modules.
5. Allows low cost & high efficiency module development

* Disadvantage

1. If a module incurs a fatal error that makes the process crash, all modules are affected.

* Reference

http://en.wikipedia.org/wiki/Module\_pattern