open source e-Learning e.V.
Technical Board

Strategy 2017

Introduction

The ILIAS Vision 2015 declares key characteristics of ILIAS that are to be consolidated or maintained in the ILIAS development today and in future. We (the Technical Board, TB) have the mandate to develop strategies for ILIAS Software-Engineering within exactly this vision. This paper is divided into five section each describing one major aspect deduced from the vision along with a listing of concrete goals we target to achieve. Our decisions in our daily business will be strongly guided by these beacons and we invite everyone to follow them as well.

Community Driven

As an open source software ILIAS is being carried by a strong and active community since many years. The whole process of developing ILIAS towards our vision and our strategies is based on this community and goes far beyond writing code. We want a product which everybody in this community can be proud of.

We set the following goals:

- Every single line of code is maintained by one or more developer. Different models of maintaining components address different needs.
- The relation of open bugs or issues to the features of ILIAS is at constant low level.
- Making different forms of contributions to the project visible is important to encourage people to contribute even more.
- The quality of all forms of contributions, regardless of whether these are in the form of code, concepts, issue-reports, documentation, testing is constant or increasing.
- Since the software ILIAS and it's community is growing constantly the number of maintainers, test-case-authors, testers and contributors of any kind grows as well.
- Users with special needs are included to the process of developing ILIAS.
- Whenever a process can be backed by technical tools (e.g. Pull Requests for code or documentation, customizable workflows in issue-trackers) those tools are implemented.

Reliable Learning Management

Not only is the software used in an environment where data for students high-stakes decision are gathered and evaluated. ILIAS is also penetrating markets with elevated security requirements like aviation and defence. The requirements for safe and reliable operation of the application are emerging and get more and more attention. To address this, a holistic concept, a mindset is to be implemented, one that is able to uphold the trust of the user base in ILIAS. The developer community powering the evolution of the code strives for excellence in this field.

We set the following goals:

- Performance changes are detected early by means of an effective monitoring system.
- The development process is backed by a environment for continuous integration that enables regular execution of automated tests. Unit tests begin to be a requirement.
- Education and training is offered to core developers to raise awareness for security guidelines and best practices.
- There are secure channels for dealing with security issues. The usage of these channels is attractive for the community members.
- Security is acknowledged and cultivated as both a process and a habit.
- Security hardening is also introduced in ILIAS retroactively.
- Documentation on secure configuration of ILIAS within common scenarios offers guidance to the community.
- ILIAS is installable and upgradeable at any point without concerns on performance, security and reliability.
- Automated Testing for security issues reassure developers about their code.

Usable for Everyone

ILIAS is used all around the world in various languages by universities, institutions of public service, companies and schools of various sizes. Among the users are many individuals with special needs, digital migrants as well as experts in e-Learning. By focusing the design of the ILIAS user experience in regard to the principles consistency, visibility, simplicity, design for error and effectiveness we strive to ensure, that ILIAS remains usable for everyone.

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We set the following goals:

- Feature requests contain a clear concept for all UI related aspects. This pushes this conceptual task towards the beginning of the design process.
- The ILIAS UI components are easy to use by different user groups.
- Stakeholders consider different user contexts while generating feature requests.
- There is guidance for developers to compose UI by enforcing an efficient UI framework for developers that has predictable results and handles accessibility to ensure streamlined and therefore learnable UI that does not exclude a distinct group of users.
- It is easy for users to report UI issues by providing the necessary channels and defining the taxonomy for the affected UI Components.
- UI decisions are founded on data generated by UI tests performed with different user groups.

Learning Everywhere Anytime

Learning takes place almost everywhere and anytime in life. ILIAS wants to support learning processes regardless of the availability of certain types of devices or internet connection.

We set the following goals:

- A clear definition for "device independence" and "mobile/offline" leads the ILIAS development.
- ILIAS runs on all relevant modern internet devices.
- All stages of our development process (requirements specification, implementation, testing) take different types of devices into account.
- ILIAS supports learning processes on- and offline.
- The ILIAS software architecture enables developers to efficiently implement features that are independent from target devices and support offline use.

Beyond Standard

ILIAS targets a huge variety of institutions with different sizes and diverse didactic scenarios and use cases. The software product ILIAS needs to be adaptable to the different requirements arising under these circumstances without compromising other key factors of quality software like ease of use or maintainability. A growing user base with different backgrounds makes it even harder to achieve this vision.

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We set the following goals:

- The concepts used in the application are transparent. This is a prerequisite that allows users to understand if and how ILIAS can be configured and where plugins or customizations are required.
- The software architecture makes it easy to swap, mix and match parts of ILIAS. This makes ILIAS a system that is suitable for many needs.
- The plugin system for ILIAS is reliable and sustainable and allows feature rich extensions of standard ILIAS.
- The coding and style conventions for standard code and plugins are streamlined.
- The creation of custom skins is possible in an efficient way.

Further Information

To achieve the aforementioned goals we took and will take several measures. The following pages document traces of our work:

- Daily work of the members and decisions made together with the Jour Fixe are documented in the Feature Wiki (http://www.ilias.de/docu/goto_docu_wiki_wpage_1_1357.html).
- Our issue tracker is a valuable tool to map several processes onto (http://www.ilias.de/mantis/).
- The Continuous Integration Server of ILIAS serves as a valuable tool for quality assurance (http://ci.ilias.de/).
- Most importantly you see marks of our work in the README.md files in the ILIAS core as well as in the code itself (https://github.com/ILIAS-eLearning/ILIAS).
- We keep the community informed by regularly blogging about our activities (http://www.ilias.de/docu/goto_docu_blog_3439.html).

A general overview and description on how we understand our work can be found in our section on ilias.de: http://www.ilias.de/docu/goto_docu_grp_5089.html.

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