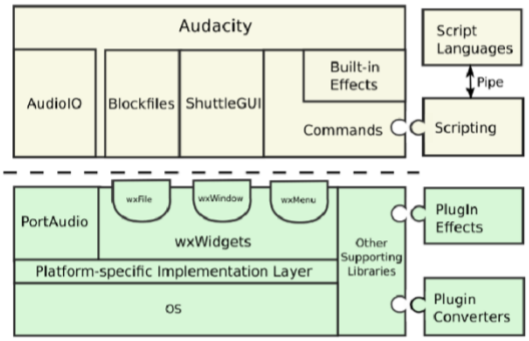
Audacity

Purpose:

Audacity is a **sound recorder and audio editor**. It is a capable program while still being easy to use. The majority of users are on Windows but the same Audacity source code compiles to run on Linux and Mac too.

Architectural pattern:

"Modular architecture"



Layer ส่วนที่ติดต่อกับผู้ใช้งาน (GUI) ใช้ Lib wxWidgets (GUI components in a cross-platform way) โดยในส่วน GUI ถูกแบ่งออกเป็นหลาย ๆ ส่วน เช่น Blockfiles, ShuttleGUI โดยในส่วนนี้ทำหน้าที่รับคำสั่งและแสดงผลต่อผู้ใช่งาน

Layer ส่วนที่ติดต่อกับ Hardware ใช้ Lib PortAudio (provides a low-level audio interface in a cross-platform way) โดยในส่วนนี้ทำหน้าที่ติดต่อกับ OS เพื่อใช้งาน Interface ต่างๆของ Hardware Modifiability

Quality attribute scenarios:

1. *Usability*

Source of stimulus:	end user(s)
Stimulus:	attempt to use for the first time
Artifact:	audacity program
Environment:	runtime
Response:	system operate normally and has tutorial for the user(s).
Response measure:	time user(s) take to get used to or understand how to use the program.

2. Integrability

Source of stimulus:	developer
Stimulus:	integrate new version of existing component
Artifact:	specifics set of components
Environment:	runtime
Response:	components in the new configuration are successfully collaborating
Response measure:	percentage of code changed

3. Testability

Source of stimulus:	automate testing program
Stimulus:	automate test
Artifact:	specifics set of components
Environment:	runtime
Response:	those components run successfully without any errors
Response measure:	time to run the test, number of errors occurred

Sources

- https://www.aosabook.org/en/audacity.html
- https://www.techopedia.com/definition/25972/modular-programming

Zotonic

Purpose

Zotonic is an open source framework for **doing full-stack web development**, all the way from frontend to backend. Consisting of a small set of core functionalities, it implements a lightweight but extensible Content Management System on top. Zotonic's main goal is to make it easy to create well-performing websites "out of the box", so that a website scales well from the start.

Architectural pattern

"N-tier/Client-server architecture"

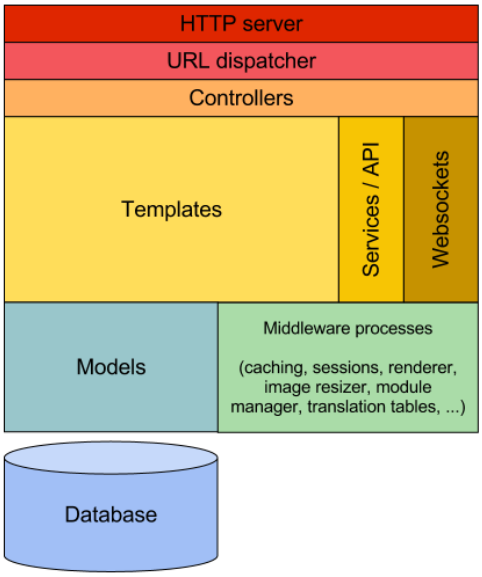


Figure 9.1 - The architecture of Zotonic

The diagram shows the layers of Zotonic that an HTTP request goes through.

Models expose functions to retrieve data from various data sources, like a database. Models expose an API to the templates, dictating how they can be used. The models are also responsible for caching their results in memory; they decide when and what is cached and for how long. When templates need data, they call a model as if it were a globally available variable.

Quality attribute scenarios

1. *Usability*

Source of stimulus: end user(s)

Stimulus: attempt to use the program for the first time

Artifact: program

Environment: runtime

Response: system operate normally and has tutorial for the user(s).

Response measure: time user(s) take to get used to or understand how to use the program clearly.

2. *Availability*

Source of stimulus: internal/external to the system

Stimulus: crash

Artifact: process running in the system

Environment: Normal operation; runtime

Response: System should do something to make it to be able to continue operating in normal mode

Response measure: availability time, repair time

3. *Modifiability*

Source of stimulus: developer

Stimulus: Wishes to modify functionality

Artifact: System user interface

Environment: runtime

Response: Locates places in architecture to be modified; makes modification without affecting other functionality; tests modification; deploys modification

Response measure: Cost of number of elements affected, effort, money

Sources

- https://www.aosabook.org/en/posa/zotonic.html

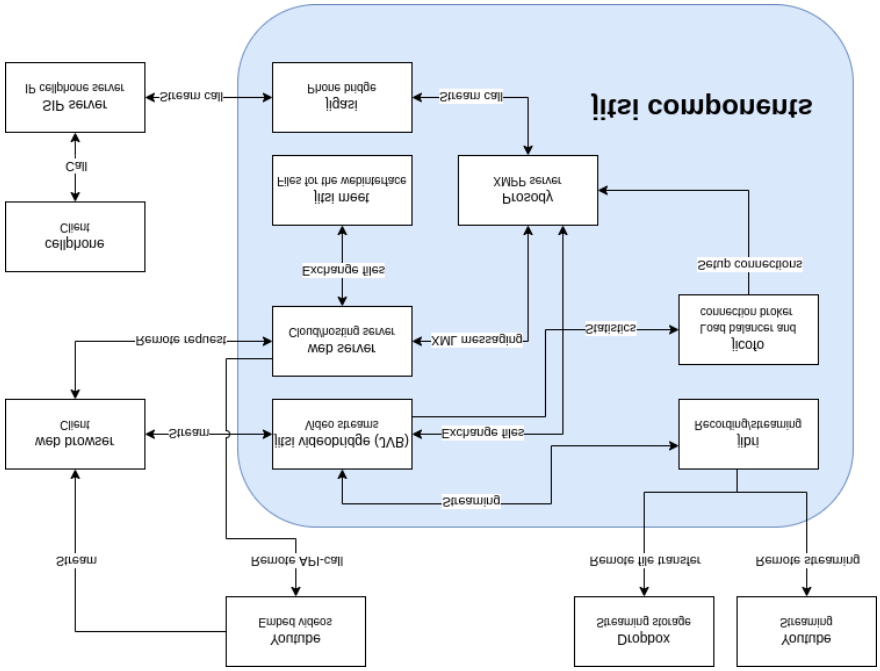
Jitsi

Purpose

Jitsi is an application that allows people to make video and voice calls, share their desktops, and exchange files and messages. More importantly it allows people to do this over a number of different protocols, ranging from the standardized XMPP (Extensible Messaging and Presence Protocol) and SIP (Session Initiation Protocol) to proprietary ones like Yahoo! and Windows Live Messenger (MSN). It runs on Microsoft Windows, Apple Mac OS X, Linux, and FreeBSD. It is written mostly in Java but it also contains parts written in native code.

Architectural pattern

"OSGI architecture"



Quality attribute scenarios

1. *Usability*

Source of stimulus:	tester
Stimulus:	attempt to test a component
Artifact:	specific component
Environment:	runtime
Response:	operating result
Response measure:	component operate normally without any errors

2. Modifiability

Source of stimulus:	developer
Stimulus:	wishes to modify functionality
Artifact:	system
Environment:	runtime
Response:	Locates places in architecture to be modified; makes modification without affecting other functionality; tests modification; deploys modification
Response measure:	other functions or quality attributes that have been affected

3. Performance

Source of stimulus:	tester
Stimulus:	wishes to test specific components
Artifact:	system
Environment:	runtime
Response:	performance of those components
Response measure:	time to test each component

Sources

- https://www.aosabook.org/en/jitsi.html