Mozilla Addon Builder
Definition of the Package Building System

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This document is written in LaTeX [1] a document markup language and document preparation system for the TeX typesetting program

1 Syntax

1.1 Objects

`Ua` is the specific User (identified by *UserName*)

`Pa` is the specific Package (identified by *PackageName*)
It should always be used within its `type` context as `La` — Library or `Aa` — Addon

`Ma` is the Module (identified by a triplet *User/PackageRevision/ModuleName*)

1.2 Object identification — revision numbers and HEAD

`Ua-Pb.n` defines revision of the Package.
`Ua-La.1` — First revision of Library `La` saved by `Ua`.

`Ua-Pb.n-Mc` defines Module inside the revision of the Package.
`Ua-La.1-Ma` — Module `Ma` inside the first revision of Library `La` saved by `Ua`.

`Pa` $\Longrightarrow$ `Ub-Pa.n` is the HEAD revision of the Package
`La` $\Longrightarrow$ `Ua-La.1` — `La`'s HEAD points to the first revision of Library `La` saved by `Ua`.

`Ua-Pb.n` $\supset$ `[Uc-Pd.m-Me, ...]` Modules inside the Package revision.
`Ua-La.2` $\supset$ `[Ua-La.1-Ma, Ub-La.2-Mb]` — Second revision of Library `La` saved by `Ua` contains `Ma` saved by `Ua` in his `La`'s first revision and `Mb` saved by `Ub` in his second `La`'s revision.

2 Building Library

2.1 Starting point

`La` $\Longrightarrow$ `Ua-La.1` $\supset$ `[Ua-La.1-Ma]`

`La` is created by `Ua`.
Its HEAD is `Ua-La.1`
`La` contains only one module - `Ma`

[1] For quick doc please follow to `http://web.mit.edu/olh/Latex/ess-latex.html`, All used symbols may be found here: `http://www.artofproblemsolving.com/Wiki/index.php/LaTeX:Symbols`

Following steps had to happen to achieve above status:

1. Ua creates a package La
   # La $\Longrightarrow$ Ua-La.0
   # Ua-La.0 $\supset$ []
2. Ua adds Ma to La
   # Ua-La.1 $\supset$ [Ua-La.1-Ma]
3. Ua sets the HEAD
   # La $\Longrightarrow$ Ua-La.1

2.2 Scenario (1 Module, 2 Users, no dependencies)

Ua and Ub are working on La
Ub modified one module

1. Ub modifies Ma
   Ub-La.0 $\supset$ [Ua-La.1-Ma] — automatic fork of La
   Ub-La.1 $\supset$ [Ub-La.1-Ma]
2. Ub sends *request* to La's creator (Ua) to upgrade La from Ub-La.1
3. Ua accepts the request by setting the HEAD to Ub's version
   La $\Longrightarrow$ Ub-La.1
4. Result: La $\Longrightarrow$ Ub-La.1 $\supset$ [Ub-La.1-Ma]

2.3 Scenario (2 Modules, 2 Users, no dependencies)

Ua and Ub are working on La
Ua created module Mb
Ub is working on Mb

1. Ua adds a new module Mb to La
   Ua-La.2 $\supset$ [Ua-La.1-Ma, Ua-La.2-Mb]
2. Ua sets the HEAD
   La$\Longrightarrow$ Ua-La.2
3. Ub modifies Mb
   Ub-La.0 $\supset$ [Ua-La.1-Ma, Ua-La.2-Mb] — automatic fork of La
   Ub-La.1 $\supset$ [Ua-La.1-Ma, Ub-La.1-Mb]
4. Ub sends request to Ua to upgrade La from Ub-La.1
5. Ua modifies Ma
   Ua-La.3 $\supset$ [Ua-La.3-Ma, Ua-La.2-Mb]
6. Ua acepts Ub's request
   Ua-La.4 $\supset$ [Ua-La.3-Ma, Ub-La.1-Mb]
7. Ua sets the HEAD
   La $\Longrightarrow$ Ua-La.4
8. Result: La -> Ua-La.4 $\supset$ [Ua-La.3-Ma, Ub-La.1-Mb]

2.4 Scenario (2 Modules, 2 Users, no dependencies)

`Ua` and `Ub` are working on `La`
`Ub` created module `Mb`

1. `Ub` adds a new module `Mb` to `La`
   `Ub-La.0` $\supset$ `[Ua-La.1-Ma]` — automatic fork of `La`
   `Ub-La.1` $\supset$ `[Ua-La.1-Ma, Ua-La.1-Mb]`
2. `Ub` modifies `Mb`
   `Ub-La.2` $\supset$ `[Ua-La.1-Ma, Ub-La.2-Mb]`
3. `Ub` sends request to `Ua` to upgrade `La` from `Ub-La.2`
4. `Ua` modifies `Ma`
   `Ua-La.2` $\supset$ `[Ua-La.2-Ma]`
5. `Ua` acepts `Ub`'s request
   `Ua-La.3` $\supset$ `[Ua-La.2-Ma, Ub-La.2-Mb]`
6. `Ua` sets the HEAD
   `La` $\Longrightarrow$ `Ua-La.3`
7. Result: `La` $\Longrightarrow$ `Ua-La.3` $\supset$ `[Ua-La.2-Ma, Ub-La.2-Mb]`

2.5 Scenario with conflict (2 Modules, 2 Users, no dependencies)

`Ua` and `Ub` are working on `La`
`Ua` created module `Mb`
`Ua` and `Ub` are working on `Mb`
Conflict arises...

1. `Ua` adds a new module `Mb` to `La`
   `Ua-La.2` $\supset$ `[Ua-La.1-Ma, Ua-La.2-Mb]`
2. `Ua` sets the HEAD
   `La` $\Longrightarrow$ `Ua-La.2`
3. `Ub` modifies `Mb`
   `Ub-La.0` $\supset$ `[Ua-La.1-Ma, Ua-La.2-Mb]` — automatic fork of `La`
   `Ub-La.1` $\supset$ `[Ua-La.1-Ma, Ub-La.1-Mb]`
4. `Ua` modifies `Mb`
   `Ua-La.3` $\supset$ `[Ua-La.1-Ma, Ua-La.2-Mb]`
5. **CONFLICT**
   At the time we've got two versions of La.Mb which came out from the same version
6. `Ua` sets the HEAD
   `La` $\supset$ `Ua-La.3`
7. `Ub` receives info that his source is behind the HEAD
   `Ub-La.1-Mb` (and `Ub-La.1`) is marked as *conflicted*
   `Ub` can't send the update request
8. `Ub` manually solves conflict by editing the `Mb`
   `Ub-La.2` $\supset$ `[Ua-La.1, Ub-La.2-Mb]`

9. `Ub` sends request to `Ua` to upgrade `La` from `Ub-La.2`
10. `Ua` acepts `Ub`'s request
    `Ua-La.4` $\supset$ `[Ua-La.3-Ma, Ub-La.2-Mb]`
11. `Ua` sets the HEAD
    `La` $\Longrightarrow$ `Ua-La.4`
12. Result: `La` $\Longrightarrow$ `Ua-La.4` $\supset$ `[Ua-La.3-Ma, Ub-La.2-Mb]`