Instant Mashup : Creating Your Own Mashup Application in Flexible Way

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Introduction

In this paper, we propose Instant Mashup, which is a platform that enables users to create a mashup application by linking data across web pages, regardless of data format. The key characteristic of Instant Mashup is handling ordinary web content and providing a simple method and interface with which users can spontaneously clip and link web elements to create a customized service instantly.

System Design

Architecture

Instant Mashup is composed of three components: an extension, an intermediated mashup server, a canvas application. The extension leverages the Chrome extension API, which can interact with a web application in a browser. Using a content script, the extension monitors DOM mutation events, which reflect the visual changes to the target web page. The intermediate server hosts the canvas web page and relays the events, such as the DOM mutation events and input (mouse, keyboard) events. The canvas web application implements the user interface for maintaining multiple partial web pages and the mashup generation results.
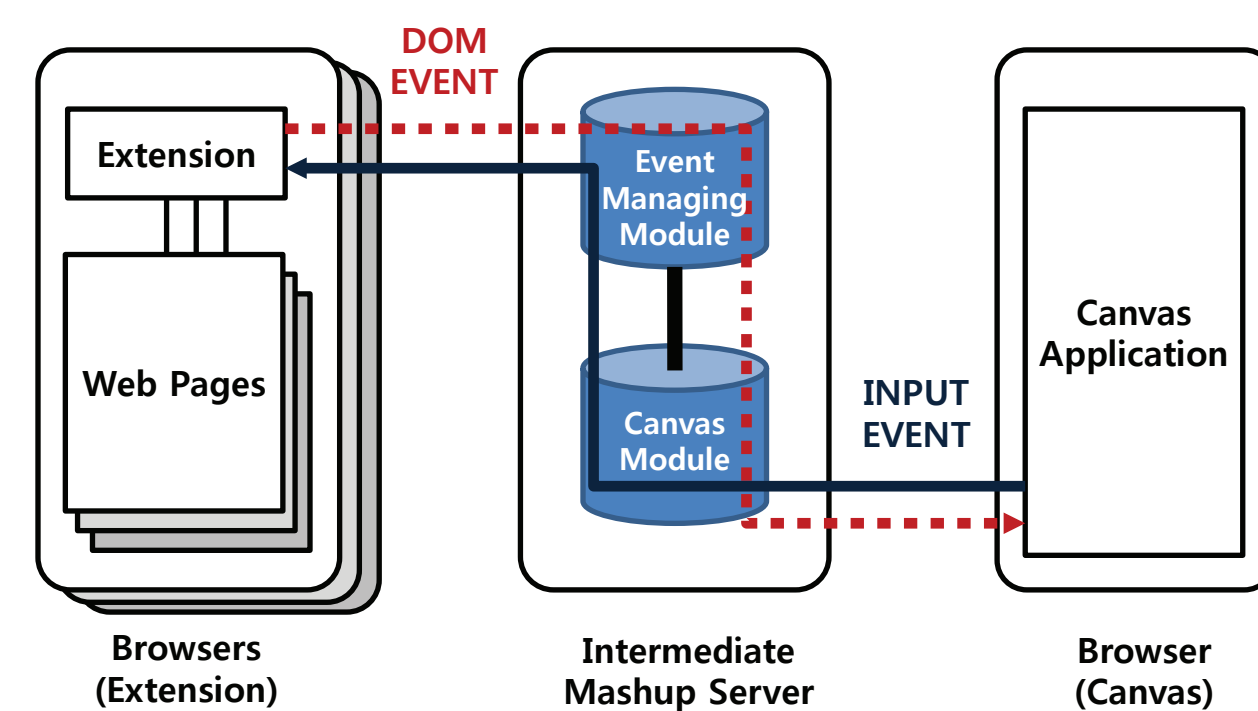
Synchronizing Applications across Browsers

After a user sends a partial web page to the canvas application, the JSON-serialized DOM node is used to synchronize Applications. Reversely, if an input event (keyboard or mouse) triggered in the canvas application, the event is also serialized and then sent to the extension.
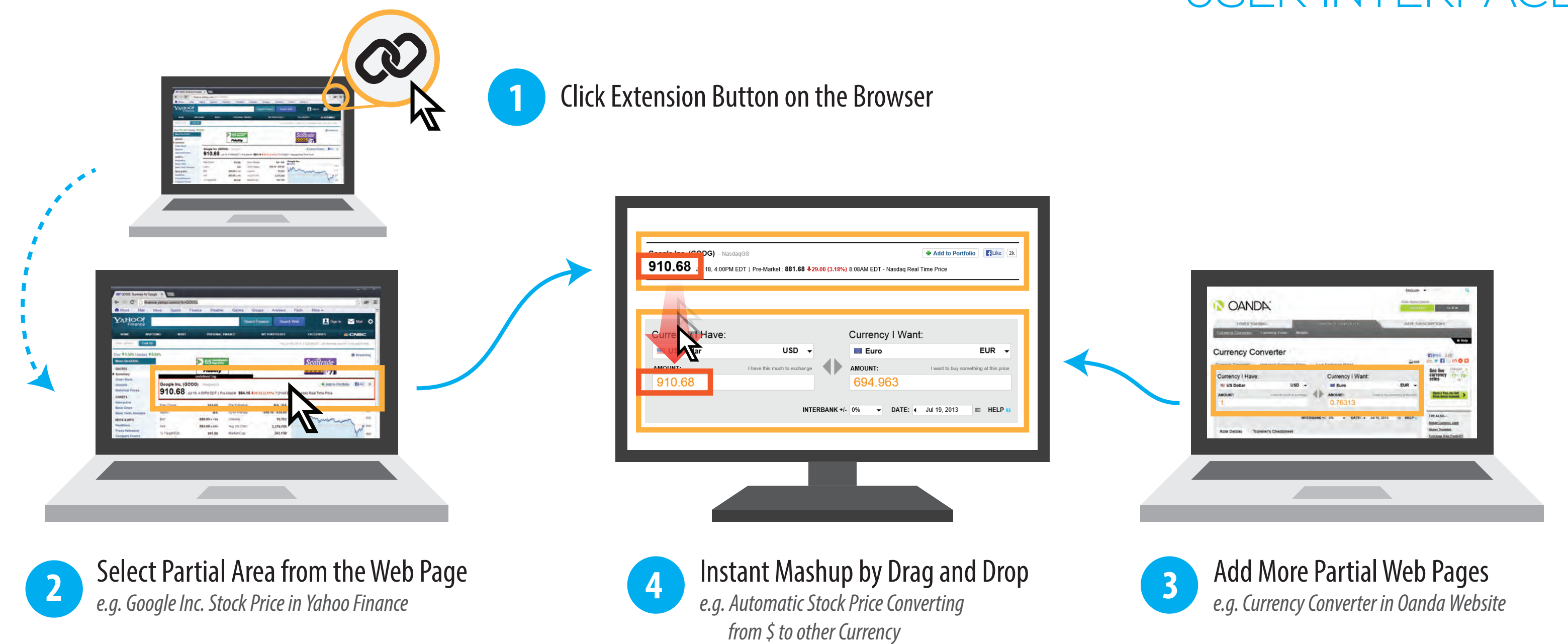
Linking Partial Web Applications

After the mashup between partial applications is created, if the intermediate mashup server detects a mutation event of the source node, it automatically relay the change of the node to the destination input form by updating the original page of the destination input form.

Conclusion

We propose the initial design of Instant Mashup, a new approach for the instant generation of a mashup application. What is unique about Instant Mashup is that it enables web services, which does not support APIs, to be mashable across web browsers in a flexible way.
Future work on Instant Mashup includes a further exploration of the mashup interface that facilitates diverse types of instant mashup content through our platform. Another area will be a user study to determine how our platform works in real situations.

User Interface & Scenario

USER INTERFACE

1. Click Extension Button on the Browser
2. Select Partial Area from the Web Page
   e.g. Google Inc. Stock Price in Yahoo Finance
4. Instant Mashup by Drag and Drop
   e.g. Automatic Stock Price Converting from $ to other Currency
3. Add More Partial Web Pages
   e.g. Currency Converter in Oanda Website

EXAMPLE SCENARIO

1. Add Live Tweet Feed from PSY's Twitter
3. Translate Newest Tweets written in Korean into English in Real-time
2. Add Translated Part from Google Translator

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