Programming With Everybody

If we observe how people adapt a code snippet to their project, can we make it easier for other people to adapt it to theirs?

Strategy:

- 1. Observe how users edit code snippets
- 2. Present crowd-created alternatives

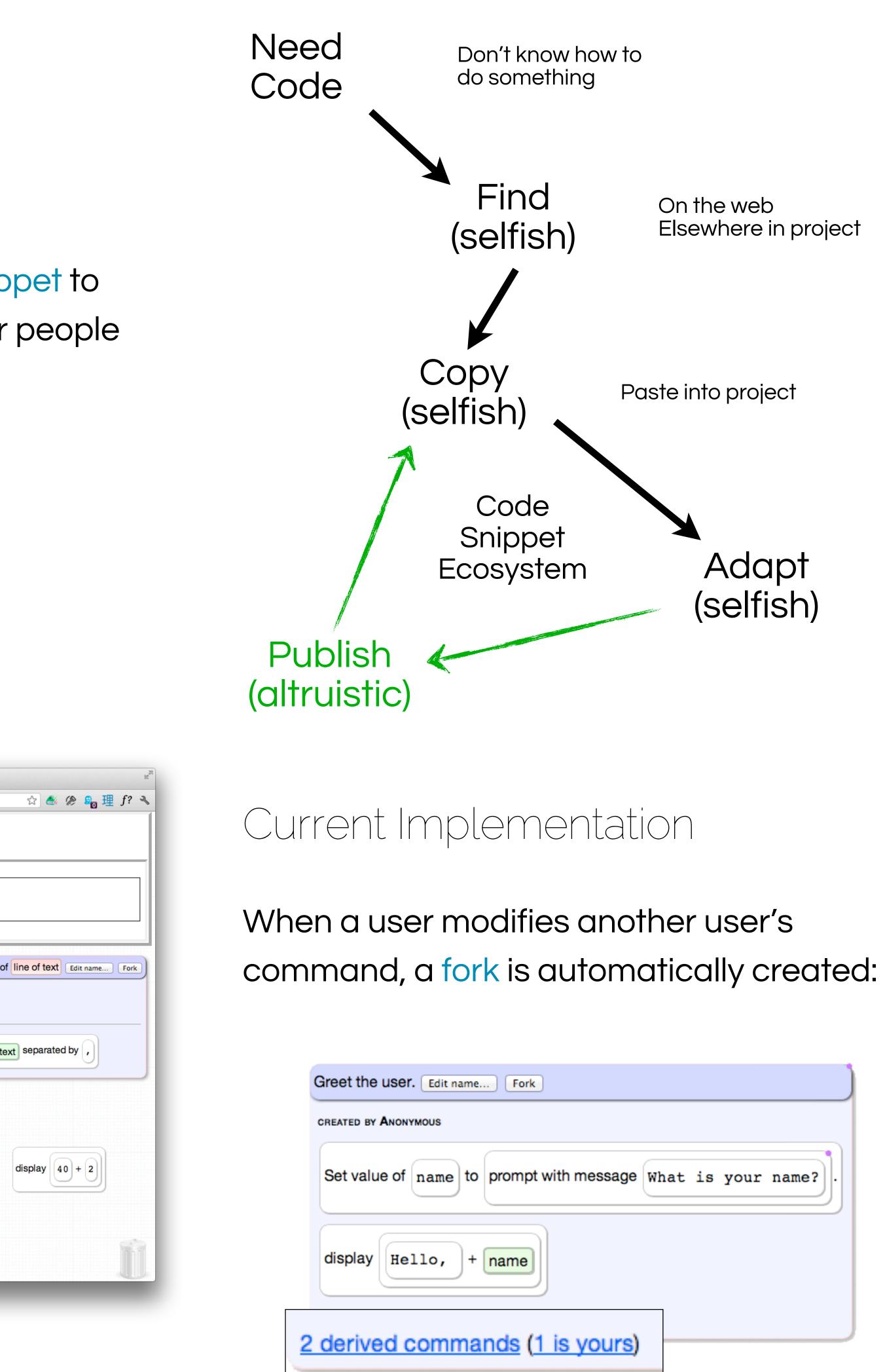
Platform: Ditty, our web-based IDE

Command Palette Recent Activity	Current Task: Task 7 of 11: csv \$	
earch for Commands:	Print the second value in the CSV-formatted input for each I	ine.
lew Command	Your Input: a,b,c√	Your Output:
Create New Command +	do,re,mi. ,all_done,	re4 all_done4
ext Processing	Restore Example Input	Clear Output
nput string output string set output to string	Search for Commands: appel	comma-separated field
Debugging	Print second field Edi CREATED BY YOU	CREATED BY <u>YOU</u> Variables: line of text
display object	Set remaining i CREATED BY YOU Append text to output.	components of line
ength of string character of string at position position	while(number of items in remaining input lines > 0){
string 1 + string 2 More	Set value of line to shift value from beginning of re	maining input lines
lumbers o get specific numbers, type them.	Append value of comma-separated fields of line at	to output.
left number + right number left number - right number	Append - to output.	

Structured editor: to easily obtain high-level descriptions of users' actions

All code is stored online: every change is recorded and immediately available to others

Auto-complete is search: find ready-made functions, or scripts from which to salvage



Users can walk the graph of derivations, sorted by metrics like:

- Times copied and referenced
- Times executed
- # exceptions thrown

Motivation

The goal of completing their current task does not intrinsically motivate users to complete the Copy-Adapt-Publish feedback loop.

Change formatting Rename variables Extract functions . . .

Future Work

We're investigating:

- Effectiveness of listing derivatives
- "Auto-completion" of edits: guess what the user will change next
- Publicity as a motivator to write easily reusable code

Try It!

http://playditty.com/ Username: uist2012 Password: dittytime

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