

# Live Hole Filling by Direct Manipulation

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Palettes... [Omar et al. 2017]

## 1 INTRODUCTION

Palettes...

## 2 EXAMPLES

### 2.1 Boolean

Checkbox

### 2.2 Matrix

Simple example

### 2.3 Grade Cutoffs

Uses liveness more obviously

### 2.4 Table

Uses type reflection

### 2.5 Pixel Art

Cool example

### 2.6 Regex

Similar to Graphite paper, can cite the empirical study we did there

### 2.7 Forms

Show off composition + mention full-screening stuff

## 3 DEFINING PALETTES

### 3.1 Background: Elm architecture

### 3.2 GUIs with Typed Holes

### 3.3 Palette-Specific Actions?

### 3.4 Reasoning Principles

## 4 FORMAL SYSTEM

...

## 5 RELATED WORK

Graphite, Relit, projectional editors, notebooks / Mathematica,

## 6 DISCUSSION

## REFERENCES

Cyrus Omar, Ian Voysey, Michael Hilton, Jonathan Aldrich, and Matthew Hammer. 2017. Hazelnut: A Bidirectionally Typed Structure Editor Calculus. In *Principles of Programming Languages*. <https://arxiv.org/abs/1607.04180>