DejaVu: Integrated Support for Developing Interactive Camera-based Programs

Jun Kato¹², Sean McDirmid¹, Xiang Cao¹ - http://junkato.jp/dejavu/

BACKGROUND

Camera-based programs are getting popular with affordable hardware and useful software libraries.

Current IDEs do not provide sufficient support and programmers have to test/debug programs by...

- Breakpoint, Console.Write()
- Custom visualization code

DEJAVU

We made an enhancement to an IDE for interactive camera-based programs.

Distinctive Challenges

A) Various visual data:

B) Continuous processing:

C) Non-reproducible input:

CANVAS

Interface to sketch and visualize “now”

Solution to A,B)

- Sketch anything to memorize what the program is doing.
- Drag and drop variables from the code editor to visualize them.

TIMELINE

Interface to look into and replay “the history”

Solution to B,C)

- See the history of data which has been shown in the canvas. (inputs, outputs, intermediate results)
- Play a new session, replay or refresh a recorded session.

IMPLEMENTATION

SharpDevelop (OSS IDE) + extension

1) Thin wrapper of Kinect SDK
2) Code rewrite before/after compilation

Original: double a = func();
Rewritten: double a = (Double)(IDE.track(func(),17));