Informatics 134

Software User Interfaces
Spring 2021

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Agenda

1. This Week

2. Event Handling

3. T3: Progressive Web App

This Week

This Week

- Lecture next Tuesday on UI prototypes
- Launch T3 Today
- Keep working on A3 (DUE ~~5/10~~ 5/18)

Event Handling

From the context of a UI, what is an event?

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- Input from the user (mouse, keyboard, touch)
- Programmatic change due to response from system (progress bar)
- Response to system activity (update required, usb connected)
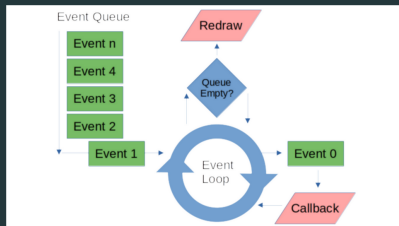
A typical UI event loop

Events are added to FIFO queue

Events are popped from queue and placed into an event loop

The event is propagated through the UI

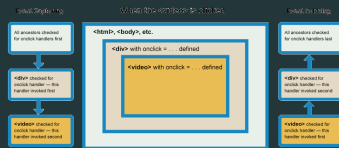When queue is empty, the display can be redrawn

Event Propagation

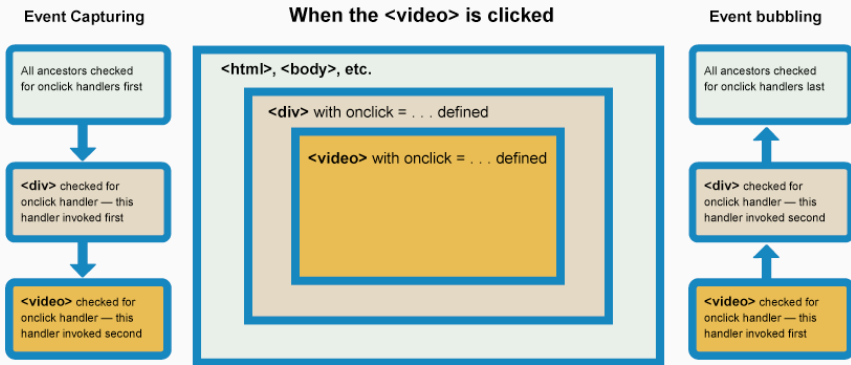Events are sent down the hierarchy to the lowest level element

Can be captured on their way down

Then 'bubbled' back up

Propagation can be canceled via Javascript function


[Mozilla, 2021]

Event Capturing

All ancestors checked for onclick handlers first

\<div> checked for onclick handler — this handler invoked first

\<video> checked for onclick handler — this handler invoked second

When the \<video> is clicked

\<html>, \<body>, etc.

\<div> with onclick = . . . defined

\<video> with onclick = . . . defined

Event bubbling

All ancestors checked for onclick handlers last

\<div> checked for onclick handler — this handler invoked second

\<video> checked for onclick handler — this handler invoked first

[Mozilla, 2021]

Event Propagation

Assuming both objects have attached event handlers to a click event, what happens when I click the button? the window?

Button

Window
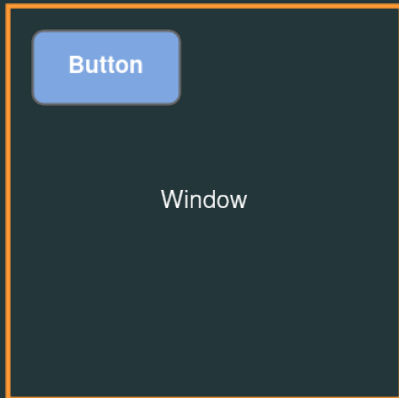
Models for Event Management in the DOM

Assign event handler to each object and handle internally

Assign event handler to a parent object and decide based on what was clicked

Demo

T3: Progressive Web App

Walkthrough

References

Mozilla (2021).
Introduction to events.