CSC309 *Programming on the Web*

week 9: event loop revisit, jsonp

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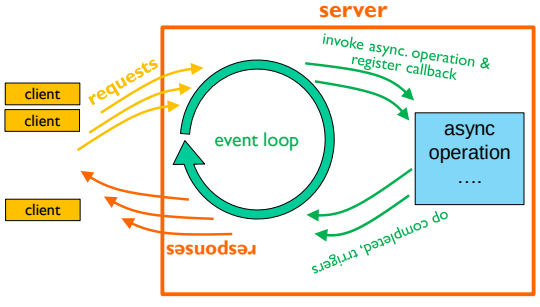
motivation

- **understanding event loop**
  - a couple of examples in week 6
  - more details (and live-coding) this week
- **cross-origin resource sharing**
  - requesting data from other domains
  - we saw http, XMLHttpRequest (XHR) already
  - jsonp this week

event loop



case study

```
// assume
// req1 is non-blocking: async part: ~4 s ; rest: ~0 s.
// req2 is synchronous: requires ~6 s.
// req3 is non-blocking: async part: ~2 s ; rest: ~0 s.
// req4 is synchronous: requires ~0 s.

// Question 1: req2 and req4 enter at time 12, in order;
// what time is each responded?

// Question 2: req4 and req2 enter at time 12, in order;
// what time is each responded?
```


case study

```
// req1 is non-blocking: async part: ~4 s ; rest: ~0 s.
// req2 is synchronous: requires ~6 s.
// req3 is non-blocking: async part: ~2 s ; rest: ~0 s.
// req4 is synchronous: requires ~0 s.

// Question 3: req3, req4, req1, and req2 enter at time 12;
// what time is each responded?

// Question 4: req3, req4, req2, and req1 enter at time 12;
// what time is each responded?

// Question 5: req2, req3, and req4 enter at time 12;
// what time is each responded?
```


case study

```
// this simulates request 1, with an asynchronous function
$("req1").click(function(){
    $("#21").html(" request 1 started at "+time());

    setTimeout (function timer() {
        $("#21").append(" and processed at "+time());
    }, 4000);

});
```

case study

```
// this simulates request 2, a blocking one
$("req2").click(function(){
      $("#22").html(" request 1 started at "+time());
      for( var k = 0; k<200000; k++) {
            console.log(k);
      }
      function x() {
           $("#22").append(" and processed at "+time());
      }
      x = x();
});
```


case study

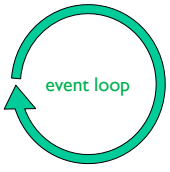
```
// this simulates request 3, with an asynchronous function
   $("#23").html(" request 1 started at "+time());

   setTimeout (function timer() {
          $("#23").append(" and processed at "+time());
     }, 2000);


// this simulates request 4
   $("#24").html(" request 4 processed at "+time());
```

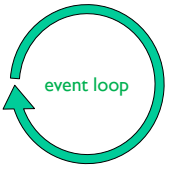

Question 3:

req3, req4, req1, and req2 enter at time 12;



Question 4:

req3, req4, req2, and req1 enter at time 12;



Question 5:

req2, req3, and req4 enter at time 12;