Measure and count executions

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Take advantage of the Console API to measure execution times and count statement executions.

TL;DR

- Use `console.time()` and `console.timeEnd()` to track time elapsed between code execution points.
- Use `console.count()` to count how many times the same string is passed to a function.

Measure execution times

The `time()` method starts a new timer and is very useful to measure how long something took. Pass a string to the method to give the marker a name.

When you want to stop the timer, call `timeEnd()` and pass it the same string passed to the initializer.

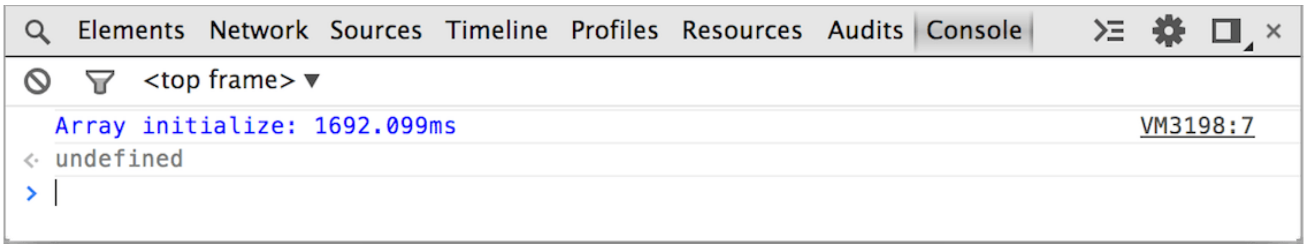
The console then logs the label and time elapsed when the `timeEnd()` method fires.

Basic example

Here, we measure the initialization of a million new Arrays:

```
console.time("Array initialize");
var array= new Array(1000000);
for (var i = array.length - 1; i >= 0; i--) {
    array[i] = new Object();
};
console.timeEnd("Array initialize");
```

Which outputs the following in the Console:

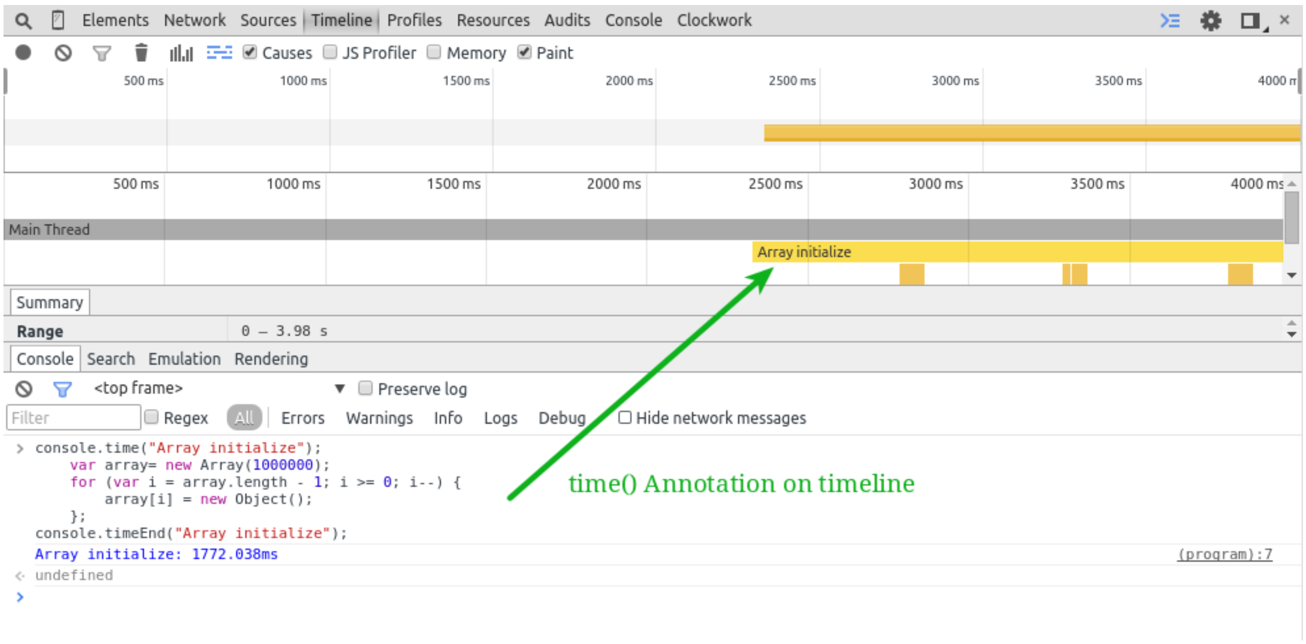


```
Array initialize: 1692.099ms                                    VM3198:7
undefined
```

Timers on the Timeline

When a Timeline recording is taking place during a `time()` operation, it annotates the timeline as well. Use it when you want to trace what your application does and where it comes from.

How an annotation on the timeline looks from `time()`:



```
> console.time("Array initialize");
      var array= new Array(1000000);
      for (var i = array.length - 1; i >= 0; i--) {
          array[i] = new Object();
      };
  console.timeEnd("Array initialize");
  Array initialize: 1772.038ms                                  (program):7
< undefined
>
```

Marking the Timeline

Note: The `timeStamp()` method only functions while a Timeline recording is in progress.

The Timeline panel provides a complete overview of where the engine spends time. You can add a mark to the timeline from the console with the `timeStamp()`. This is a simple way to correlate events in your application with other events.

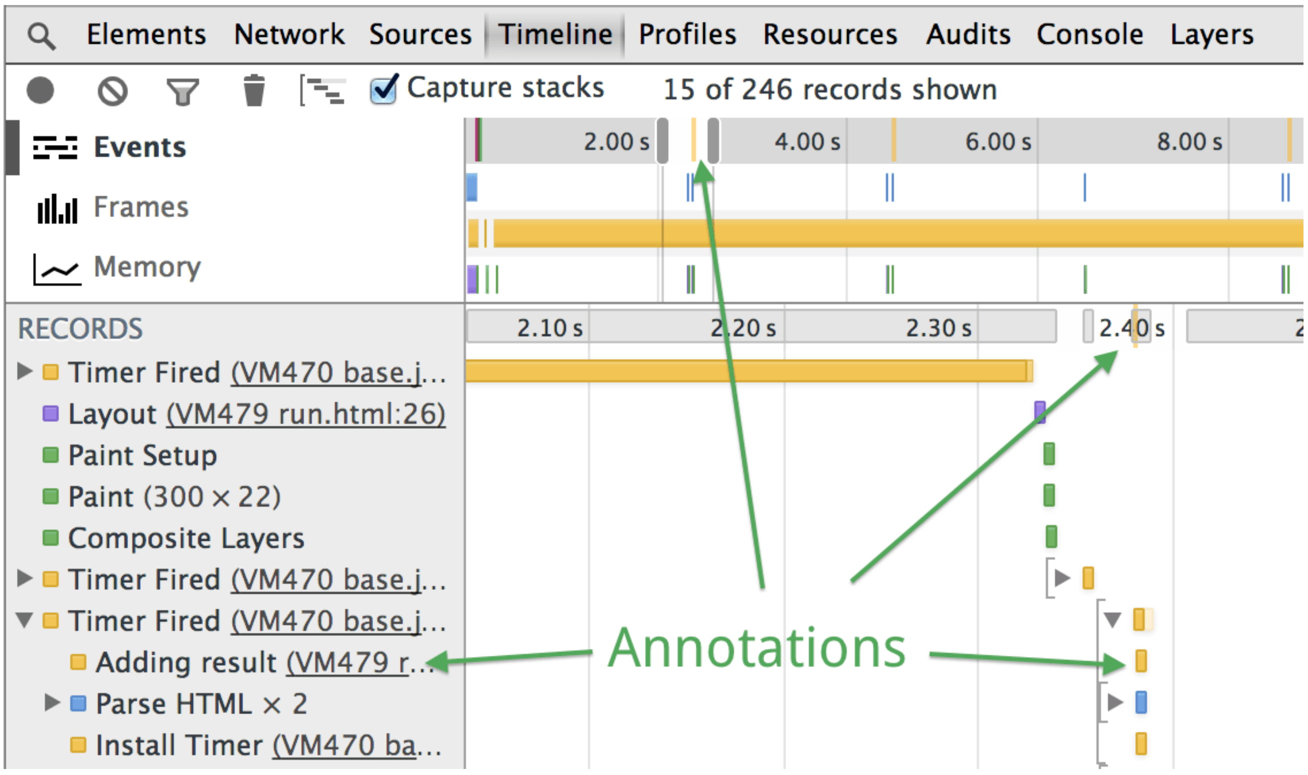
The **timeStamp()** annotates the Timeline in the following places:

- A yellow vertical line in the Timeline's summary and details view.
- It adds a record to the list of events.

The following example code:

```
function AddResult(name, result) {
    console.timeStamp("Adding result");
    var text = name + ': ' + result;
    var results = document.getElementById("results");
    results.innerHTML += (text + "<br>");
}
```

Results in the following Timeline timestamps:



Counting statement executions

Use the **count()** method to log a provided string along with the number of times the same string has been provided. When the exact statement is given to **count()** on the same line, the number is incremented.

Example code of using **count()** with some dynamic content:

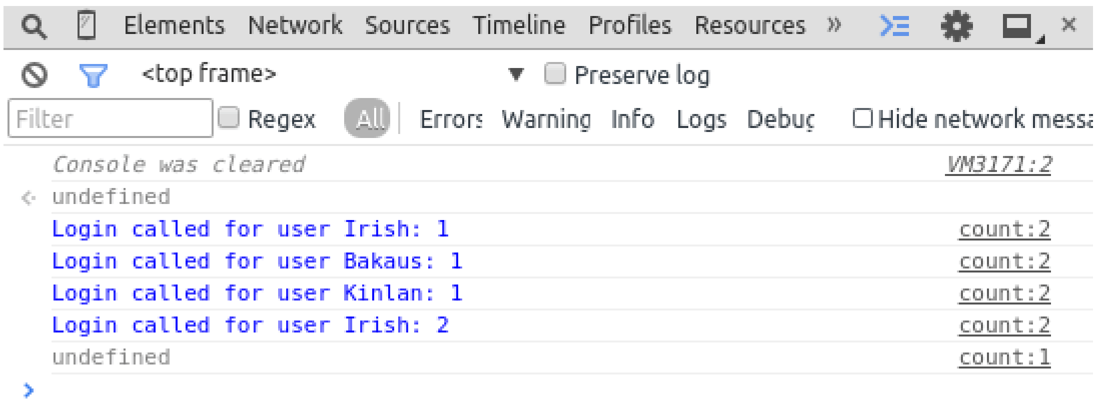
```
function login(user) {
    console.count("Login called for user " + user);
}

users = [ // by last name since we have too many Pauls.
    'Irish',
    'Bakaus',
    'Kinlan'
];

users.forEach(function(element, index, array) {
    login(element);
});

login(users[0]);
```

Output of the code sample:



```
Console was cleared                                    VM3171:2
undefined
Login called for user Irish: 1                          count:2
Login called for user Bakaus: 1                         count:2
Login called for user Kinlan: 1                         count:2
Login called for user Irish: 2                          count:2
undefined                                               count:1
>
```

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