

To do:

Sort from most time used to least time used.
Create a state system/view to easily understand the data.
Implement a more efficient searching/sorting algorithm.
Clean up the code.

Code:

```
loadModule("/TraceCompass/Trace");

//get the active trace
var trace = getActiveTrace();
if(trace==null){
    print("No trace is active.");
    exit();
}

//this list will be used like a 2d array in java
//it will contain one list for each CPU of the "sched_switch" events
var cpus = [];

//this block will create the 2d list mentioned above
var iter = getEventIterator(trace);
var event = null;
while (iter.hasNext()){
    event = iter.next();

    var eventName = event.getName();
    var eventCPU = getEventFieldValue(event,"CPU")

    if(eventName=="sched_switch"){
        //create a new CPU list if this is the first event for that CPU
        if(cpus[eventCPU]==null){
            var events = [];
            events[0] = event;
            cpus[eventCPU] = events;
        }
        //otherwise add the event to the end of the existing CPU list
    }else{
        cpus[eventCPU][cpus[eventCPU].length] = event;
    }
}

//this block calculates, for each CPU, the time from the 'i'th sched_switch event to the 'i+1'th and
//matches that time with the corresponding thread id
for(i=0; i<cpus.length; i++){
    var switches = [];
    var durations = [];
    var p = 0;
```

```

var prev = -1;
print("CPU " + i);
for(j=0; j<cpus[i].length; j++){
    if(prev!=-1){
        switches[p] = cpus[i][j];
        durations[p] = cpus[i][j].getTimestamp().toNanos() - prev;
        p++;
    }
    prev = cpus[i][j].getTimestamp().toNanos();
}
addDurations(switches,durations);
}

//done
print("Done");

//this function matches, for each CPU, the thread id's together and adds their durations
function addDurations(events,durations){
    var newListEvents = [];
    var newListDurations = [];
    var q = 0;
    for(k=0; k<events.length; k++){
        var exists = false;
        for(l=0; l<newListEvents.length; l++){
            //if the thread is already in the new list, add the additional duration to the
existing duration

            if(getEventFieldValue(events[k],"prev_tid")==getEventFieldValue(newListEvents[l],"prev_tid")){
                newListDurations[l] = newListDurations[l] + durations[k];
                exists = true;
            }
        }
        //if the thread is not yet represented in the new list, add it
        if(!exists){
            newListEvents[q] = events[k];
            newListDurations[q] = durations[k];
            q++;
        }
    }

    //print the calculated data
    for(k=0; k<newListEvents.length; k++){
        printEvent(newListEvents[k], newListDurations[k]);
    }
}

//this function prints the data to the console

```

```

function printEvent(event, duration){
    print(getEventFieldValue(event,"prev_tid") + ":" + getEventFieldValue(event,"prev_comm") + " -
-> " + duration + " nanoseconds");
}

```

Output:

```

File Window Help
Properties Bookmarks Console State System Explorer
[EASE Rhino Engine]: L/Tracing Lab 1/get_sched_switch.js [terminated]
CPU 0
5387:kworker/u8:3 --> 441600 nanoseconds
1:systemd --> 113920 nanoseconds
0:swapper/0 --> 598283520 nanoseconds
1523:gnome-shell --> 9789440 nanoseconds
8:rcu_sched --> 64256 nanoseconds
5345:kworker/0:0 --> 336128 nanoseconds
3574:java --> 7462144 nanoseconds
4196:Timer-17 --> 237568 nanoseconds
5627:lttng --> 882432 nanoseconds
457:systemd-resolve --> 1137920 nanoseconds
1777:gdbus --> 297728 nanoseconds
5393:kworker/u8:9 --> 439808 nanoseconds
1561:ibus-daemon --> 1248512 nanoseconds
2076:gnome-terminal- --> 2075392 nanoseconds
1388:Xorg --> 2696448 nanoseconds
1678:gsd-color --> 159232 nanoseconds
3588:gmain --> 125440 nanoseconds
2083:gdbus --> 177408 nanoseconds
1527:gdbus --> 486656 nanoseconds
5629:pool --> 301312 nanoseconds
7:ksoftirqd/0 --> 28672 nanoseconds
5589:generateWgetTra --> 609792 nanoseconds
CPU 1
5365:kworker/1:3 --> 410624 nanoseconds
5364:kworker/1:1 --> 66816 nanoseconds
1388:Xorg --> 8868096 nanoseconds
0:swapper/1 --> 579609856 nanoseconds
2076:gnome-terminal- --> 462592 nanoseconds
16:ksoftirqd/1 --> 53504 nanoseconds
5603:lttng-sessiond --> 94464 nanoseconds
4191:Timer-13 --> 350720 nanoseconds
4194:Timer-15 --> 167936 nanoseconds
5387:kworker/u8:3 --> 499712 nanoseconds
5589:generateWgetTra --> 773120 nanoseconds
5628:generateWgetTra --> 18151936 nanoseconds
1547:alsa-sink-CX820 --> 431872 nanoseconds
8:rcu_sched --> 156928 nanoseconds
1563:gdbus --> 2052352 nanoseconds
1768:ibus-engine-sim --> 65280 nanoseconds
1523:gnome-shell --> 363776 nanoseconds
1527:gdbus --> 345600 nanoseconds
5393:kworker/u8:9 --> 59648 nanoseconds

```