

TypeStabilityExperiment

September 11, 2018

```
In [1]: const N = 100000
function typeunstable(x::Number)
    for i=1:N
        x += rand()
    end
    x
end
x = 1
@time typeunstable(x)
x = 1.0
@time typeunstable(x)

function typeunstable2(x::Number)
    float(x)
    function wrapped()
        for i=1:N
            x += rand()
        end
        x
    end
    wrapped()
end
x=1
@time typeunstable2(x)
x = 1.0
@time typeunstable2(x)

function typestable(x::Number)
    function wrapped(x::Float64)
        for i=1:N
            x += rand()
        end
        x
    end
    wrapped(x::Int) = wrapped(float(x))
    wrapped(x)
```

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end
x=1
@time typestable(x)
x = 1.0
@time typestable(x)

function wrapped2(x::Float64)
    for i=1:N
        x += rand()
    end
    x
end
wrapped2(x::Int) = wrapped2(float(x))
function typestable2(x::Number)
    wrapped2(x)
end

x=1
@time typestable2(x)
x = 1.0
@time typestable2(x)

```

```

0.010574 seconds (15.99 k allocations: 843.985 KiB)
0.007988 seconds (13.76 k allocations: 726.462 KiB)
0.020086 seconds (217.46 k allocations: 3.943 MiB)
0.013769 seconds (203.31 k allocations: 3.225 MiB)
0.016915 seconds (17.05 k allocations: 896.674 KiB)
0.003922 seconds (1.71 k allocations: 88.008 KiB)
0.009934 seconds (15.54 k allocations: 829.981 KiB)
0.002742 seconds (524 allocations: 32.446 KiB)

```

Out[1]: 50006.16136107734