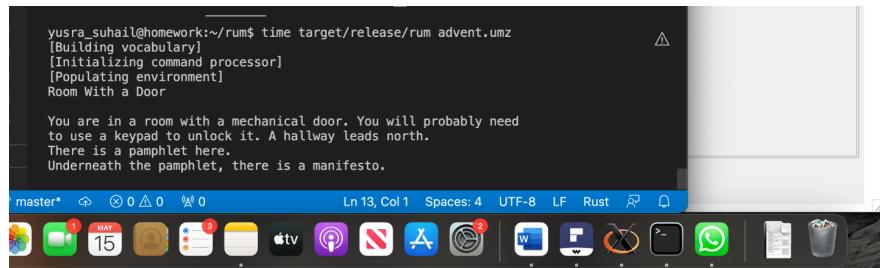


Phase	Benchmark	Time	Calls to parse code function	Change
Original	Sandmark	real 5m29.765s user 5m29.184s sys 0m0.508s	672 280 97.87% memcpy	Original Code  Our code was very slow and would take a long time to run. In the kcachegrind we saw that we were spending a lot of time in loading programs, mapping segments and unmapping.
	Midmark	real 12.732s user 12.718s sys 0.012s	427055 99.98% main	
Phase 1	Sandmark	real 5m30.262s user 5m29.735s sys 0m0.468s	834 136 97.7% memcpy	Since we were spending a lot of time in calling functions, so instead of calling a get function for all of our registers in every match statement in the instructions module, we just called it once in the start and assigned that call to a variable and called that variable in the different match statements.
	Midmark	real 12.654s user 12.633s sys 0.020s	423 959 98.55% memcpy	
Phase 2	Sandmark	real 5m29.738s user 5m29.225s sys 0m0.464s	636 177 97.87% memcpy	Our code was spending a lot of time in the main, we thought maybe one improvement we could make was with our loop which has to run forever until halt instruction is received. So, Instead of having a while true in the main function, we changed it to a loop that helps with not checking a condition on every iteration because a

	Midmark	real user sys	0m12.627s 0m12.613s 0m0.012s	426 034 98.67% memcpy	loop just runs indefinitely and that's what we want.
Phase 3	Sandmark	real user sys	0m24.736s 0m24.471s 0m0.260s	121 361 884 0.36% memcpy	So when we were doing the profiling we saw that we were taking a lot of time executing the load_prog function so to fix that we added a conditional that stated that if reg-b is not 0 then only load the program. This decreased our time for running binaries significantly.

We were able to run the advent game partially but were not able to fully get the running time from it because our um was still not that fast as required.



```
yusra_suhail@homework:~/rum$ time target/release/rum advent.umz
[Building vocabulary]
[Initializing command processor]
[Populating environment]
Room With a Door

You are in a room with a mechanical door. You will probably need
to use a keypad to unlock it. A hallway leads north.
There is a pamphlet here.
Underneath the pamphlet, there is a manifesto.

master* 0 △ 0 ⌂ 0 Ln 13, Col 1 Spaces: 4 UTF-8 LF Rust ⌂
```