# HW4 Computer Architecture


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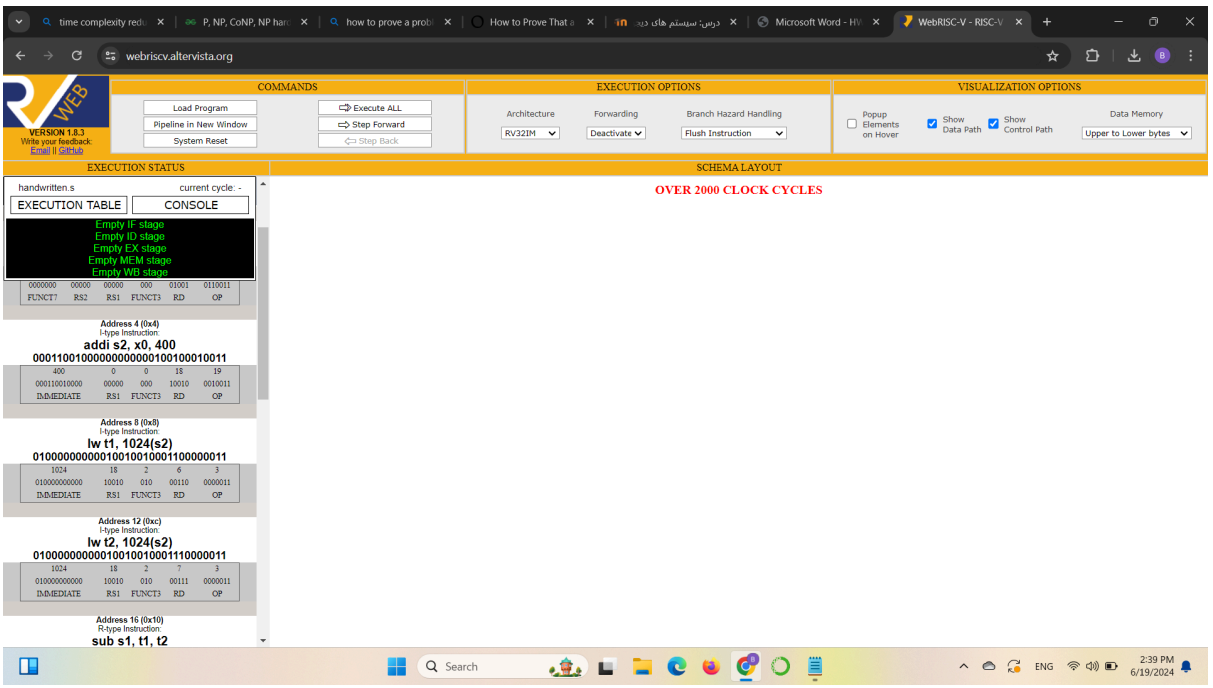
## Assembly code:

```
add s1, zero, zero
addi s2, zero, 400
Loop: lw t1, 1024 (s2)
lw t2, 1028 (s2)
sub s1, t1, t2
slt t3, s1, zero
bne t3, zero, L1
sub s1, zero, s1
L1: sw s1, 1024 (s2)
addi s2, s2, -4
bne s2, zero, Loop
```

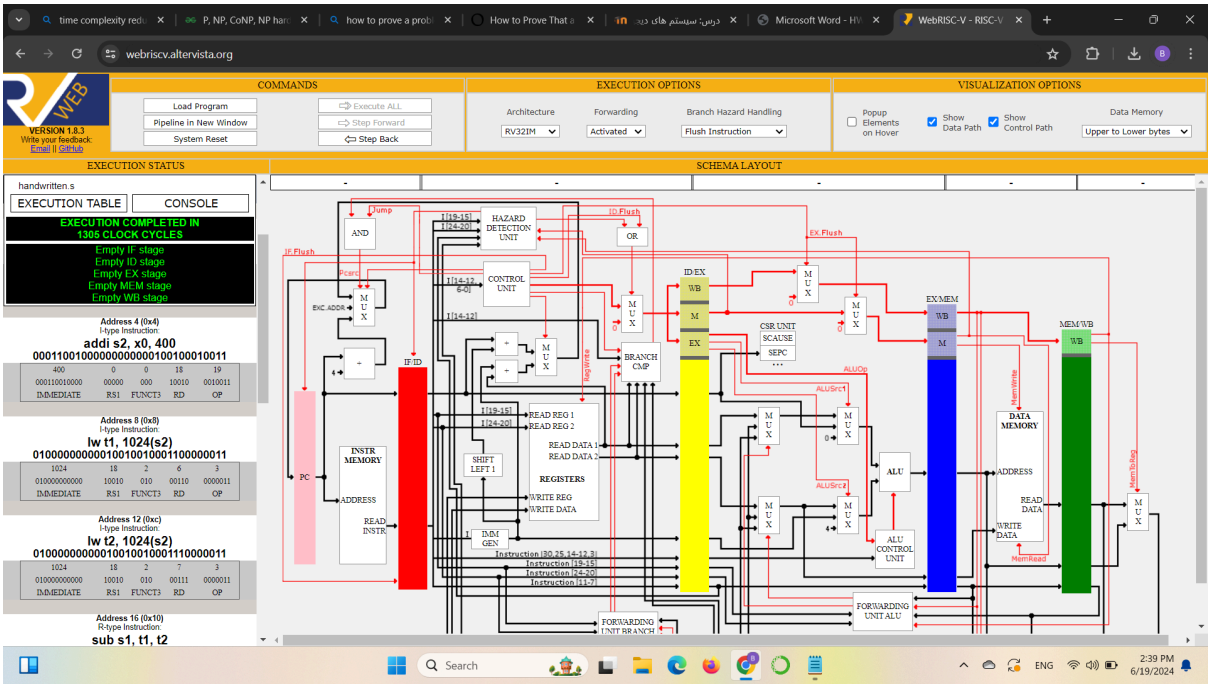
Changes :

- Reducing the value of s2 register to 400
- All offsets are changed to 1024

1- Deactivated Data Forwarding: The execution time is over 2000 clock cycles.



2- Data Forward Activated: The execution time is 1305 clock cycles.




Conclusion : Activating data forwarding increases the speed of operation systems and it causes them to consume less computational power.