# How UP executes an instruction?

## ASSEMBLY INSTRUCTION:

```
LDA 4200
MVI B,78H
ADD B
STA 4500H
HLT
```

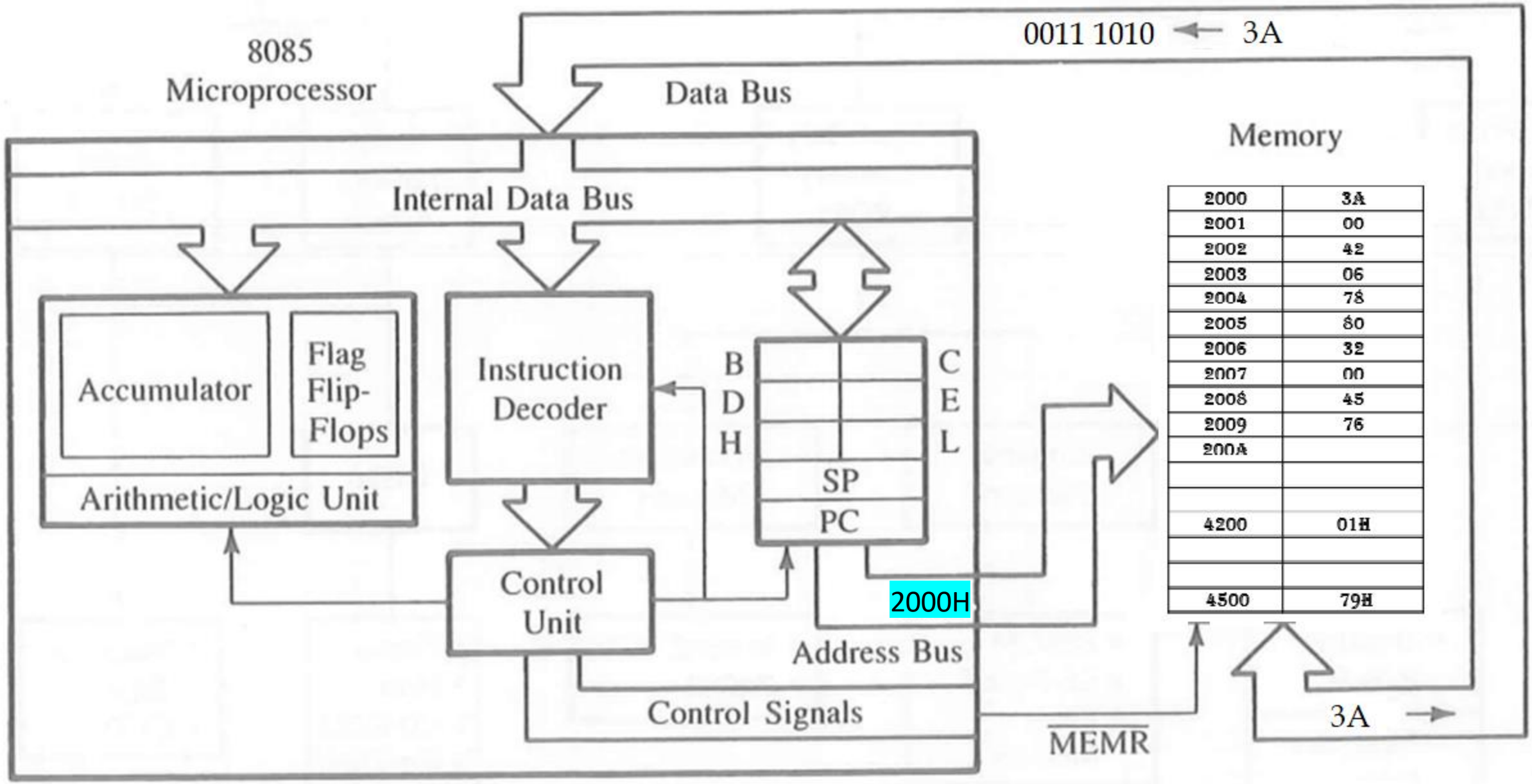
## MACHINE CODE:

| | | |
|---|---|---|
| 2000 | 3A | LDA 4200 |
| 2001 | 00 | |
| 2002 | 42 | |
| 2003 | 06 | MVI B,78H |
| 2004 | 78 | |
| 2005 | 80 | ADD B |
| 2006 | 32 | STA 4500H |
| 2007 | 00 | |
| 2008 | 45 | |
| 2009 | 76 | HLT |
| 200A | | |

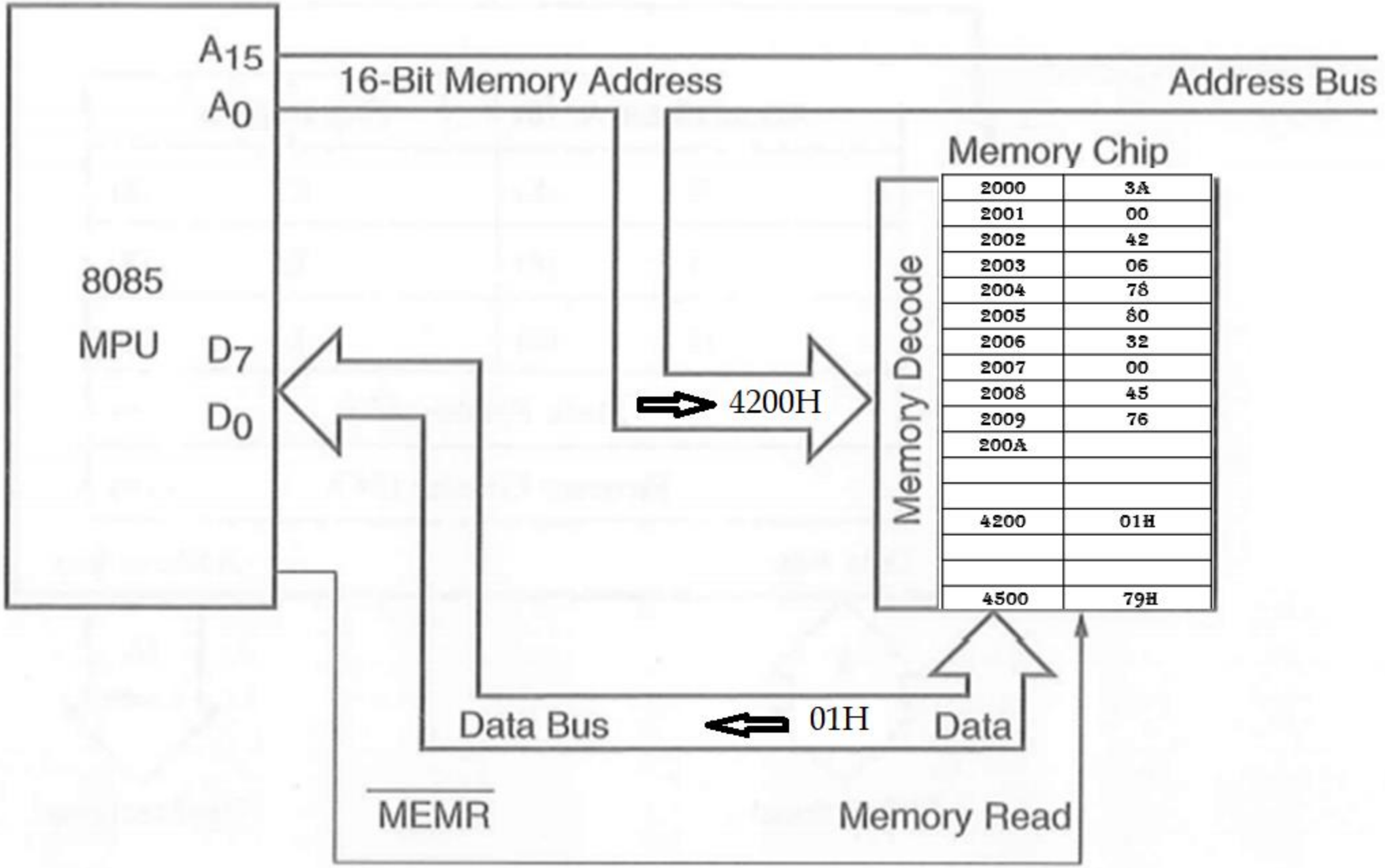
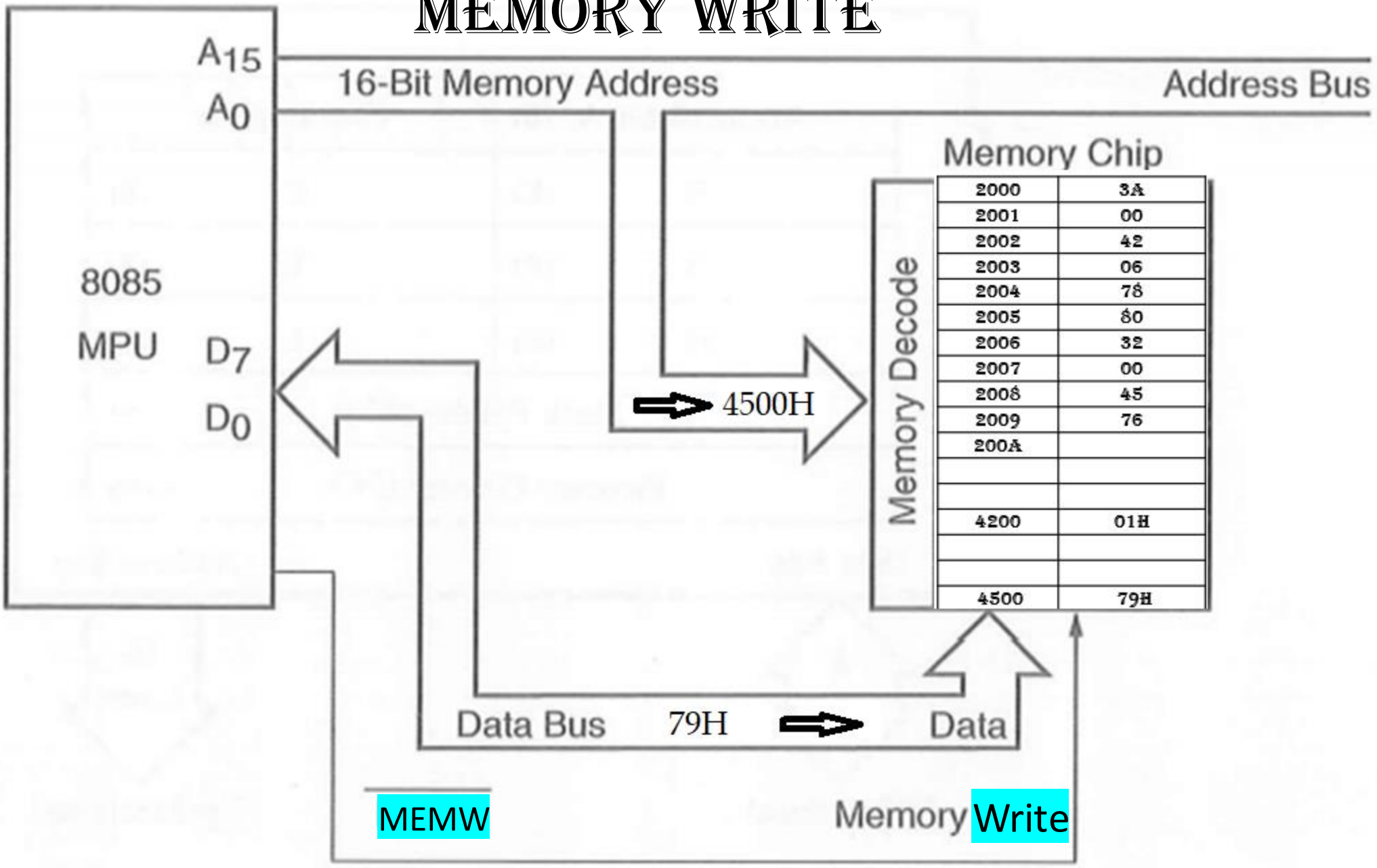
## MEMORY

| | |
|---|---|
| 2000 | 3A |
| 2001 | 00 |
| 2002 | 42 |
| 2003 | 06 |
| 2004 | 78 |
| 2005 | 80 |
| 2006 | 32 |
| 2007 | 00 |
| 2008 | 45 |
| 2009 | 76 |
| 200A | |
| | |
| | |
| 4200 | 01H |
| | |
| | |
| 4500 | 79H |

# OPCODE FETCH



# MEMORY READ


A15
A0
16-Bit Memory Address
Address Bus
Memory Chip
8085
MPU
D7
D0
4200H
Memory Decode
2000 3A
2001 00
2002 42
2003 06
2004 78
2005 80
2006 32
2007 00
2008 45
2009 76
200A
4200 01H
4500 79H
Data Bus
01H
Data
MEMR
Memory Read

# MEMORY WRITE