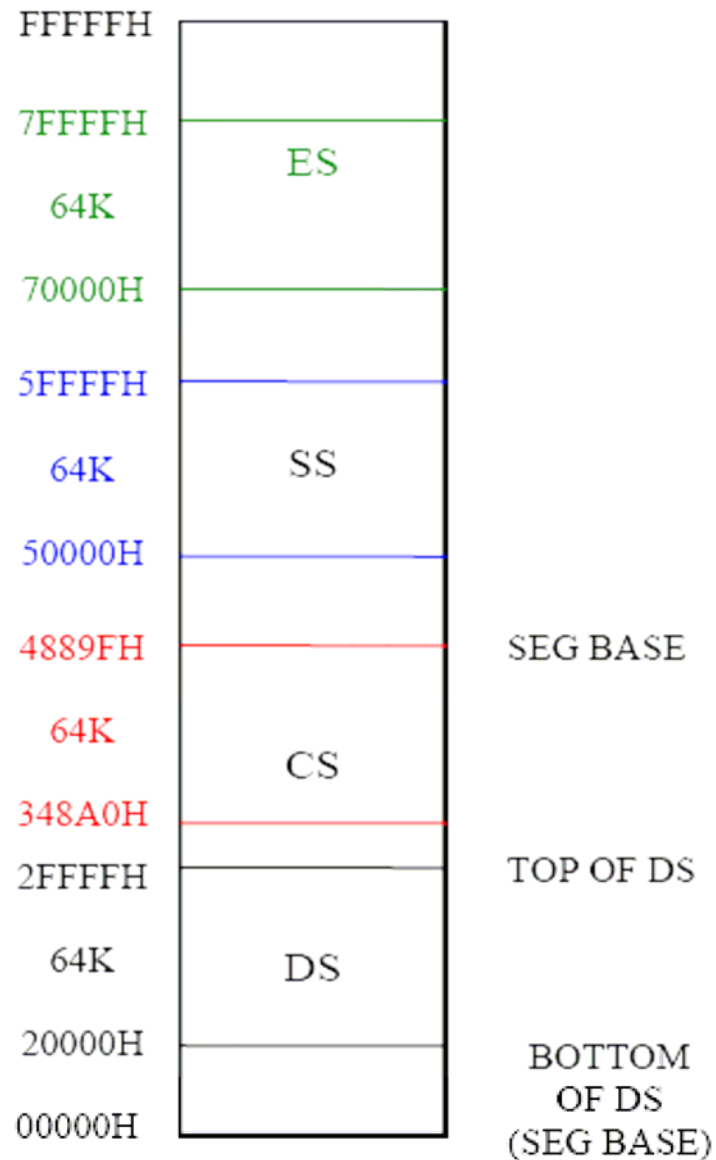


# Memory Segmentation



# Advantages of memory segmentation

- Allow the memory capacity to be 1Mb even though the addresses associated with the individual instructions are only 16 bits wide.
- Facilitate the use of separate memory areas for the program, its data and the stack.
- Permit a program and/or its data to be put into different areas of memory each time the program is executed.
- Multitasking becomes easy.

# Generation of 20 bit physical address

- The 20-bit Physical address is often represented as, Segment Base : Offset
- OR CS : IP

CS    3 4 8 0 0 → Implied Zero

+IP    1 2 3 4

-----

3 5 A3 4 H

# Flag Register ( PSW )

X	X	X	X	<b>O</b>	<b>D</b>	<b>I</b>	<b>T</b>	S	Z	X	A	X	P	X	C
				<b>F</b>	<b>F</b>	<b>F</b>	<b>F</b>	F	F		F		F		F

8085 Compatible Flags

- 6 Conditional Flags and 3 Control Flags.
- DF = Directional Flag, When 0 autoincrement and if 1 autodecrement.

# Addressing Modes

A] Data Category

B] Branch Category



- 1) Immediate Addressing
- 2) Direct Addressing  
( **Segment Override prefix** )
- 3) Register Addressing
- 4) Register Indirect Addressing

# Addressing Modes Contd....

- 5) Register Relative addressing
- 6) Base Index addressing
- 7) Relative Base Index addressing

## **B] Branch Category**

- 1) Intrasegment Direct
- 2) Intersegment Indirect
- 3) Intrasegment Direct
- 4) Intersegment Indirect