

Bilgisayar Sistemlerine Genel Bakış

BIL-304: Bilgisayar Mimarisi

Dersi veren öğretim üyesi:

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Ders kitabına ait sunum dosyalarından adapte edilmiştir: <http://csapp.cs.cmu.edu/>

Adapted from slides of the textbook: <http://csapp.cs.cmu.edu/>

Merhaba!

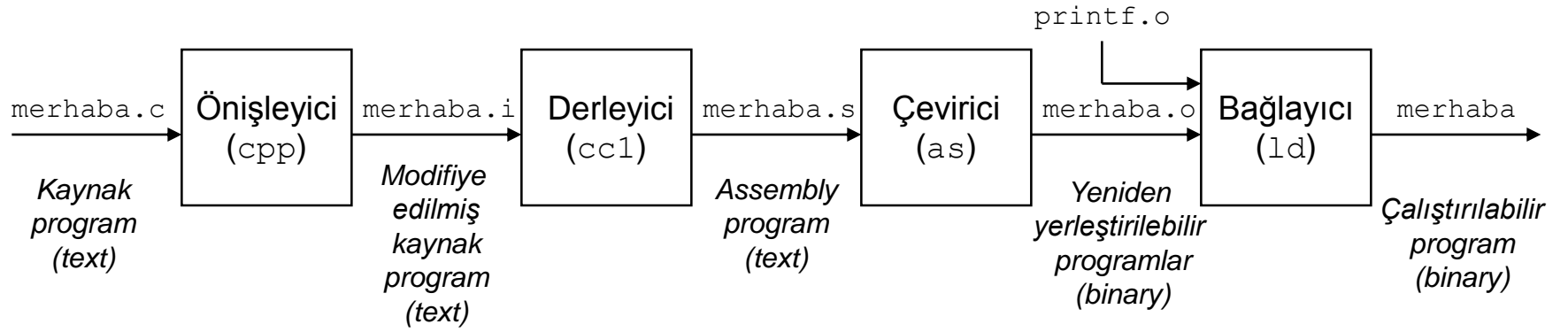
```
#include <stdio.h>
int main()
{
    printf("Merhaba ,Dunya\n");
    return 0;
}
```

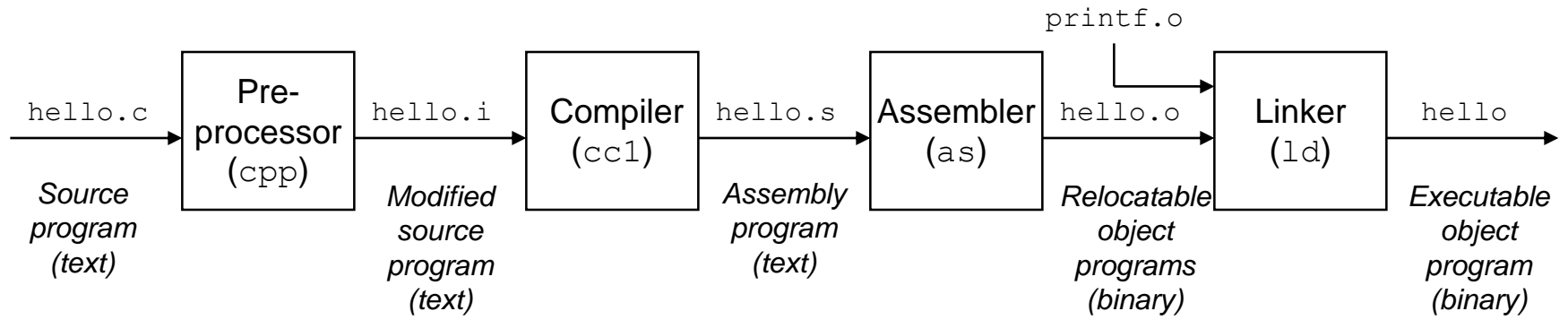
ASCII Tablosu

Dec	Hx	Oct	Char	Dec	Hx	Oct	Html	Chr	Dec	Hx	Oct	Html	Chr	Dec	Hx	Oct	Html	Chr
0	0	000	NUL (null)	32	20	040	 	Space	64	40	100	@	@	96	60	140	`	`
1	1	001	SOH (start of heading)	33	21	041	!	!	65	41	101	A	A	97	61	141	a	a
2	2	002	STX (start of text)	34	22	042	"	"	66	42	102	B	B	98	62	142	b	b
3	3	003	ETX (end of text)	35	23	043	#	#	67	43	103	C	C	99	63	143	c	c
4	4	004	EOT (end of transmission)	36	24	044	$	\$	68	44	104	D	D	100	64	144	d	d
5	5	005	ENQ (enquiry)	37	25	045	%	%	69	45	105	E	E	101	65	145	e	e
6	6	006	ACK (acknowledge)	38	26	046	&	&	70	46	106	F	F	102	66	146	f	f
7	7	007	BEL (bell)	39	27	047	'	'	71	47	107	G	G	103	67	147	g	g
8	8	010	BS (backspace)	40	28	050	((72	48	110	H	H	104	68	150	h	h
9	9	011	TAB (horizontal tab)	41	29	051))	73	49	111	I	I	105	69	151	i	i
10	A	012	LF (NL line feed, new line)	42	2A	052	*	*	74	4A	112	J	J	106	6A	152	j	j
11	B	013	VT (vertical tab)	43	2B	053	+	+	75	4B	113	K	K	107	6B	153	k	k
12	C	014	FF (NP form feed, new page)	44	2C	054	,	,	76	4C	114	L	L	108	6C	154	l	l
13	D	015	CR (carriage return)	45	2D	055	-	-	77	4D	115	M	M	109	6D	155	m	m
14	E	016	SO (shift out)	46	2E	056	.	.	78	4E	116	N	N	110	6E	156	n	n
15	F	017	SI (shift in)	47	2F	057	/	/	79	4F	117	O	O	111	6F	157	o	o
16	10	020	DLE (data link escape)	48	30	060	0	0	80	50	120	P	P	112	70	160	p	p
17	11	021	DC1 (device control 1)	49	31	061	1	1	81	51	121	Q	Q	113	71	161	q	q
18	12	022	DC2 (device control 2)	50	32	062	2	2	82	52	122	R	R	114	72	162	r	r
19	13	023	DC3 (device control 3)	51	33	063	3	3	83	53	123	S	S	115	73	163	s	s
20	14	024	DC4 (device control 4)	52	34	064	4	4	84	54	124	T	T	116	74	164	t	t
21	15	025	NAK (negative acknowledge)	53	35	065	5	5	85	55	125	U	U	117	75	165	u	u
22	16	026	SYN (synchronous idle)	54	36	066	6	6	86	56	126	V	V	118	76	166	v	v
23	17	027	ETB (end of trans. block)	55	37	067	7	7	87	57	127	W	W	119	77	167	w	w
24	18	030	CAN (cancel)	56	38	070	8	8	88	58	130	X	X	120	78	170	x	x
25	19	031	EM (end of medium)	57	39	071	9	9	89	59	131	Y	Y	121	79	171	y	y
26	1A	032	SUB (substitute)	58	3A	072	:	:	90	5A	132	Z	Z	122	7A	172	z	z
27	1B	033	ESC (escape)	59	3B	073	;	;	91	5B	133	[[123	7B	173	{	{
28	1C	034	FS (file separator)	60	3C	074	<	<	92	5C	134	\	\	124	7C	174	|	
29	1D	035	GS (group separator)	61	3D	075	=	=	93	5D	135]]	125	7D	175	}	}
30	1E	036	RS (record separator)	62	3E	076	>	>	94	5E	136	^	^	126	7E	176	~	~
31	1F	037	US (unit separator)	63	3F	077	?	?	95	5F	137	_	_	127	7F	177		DEL

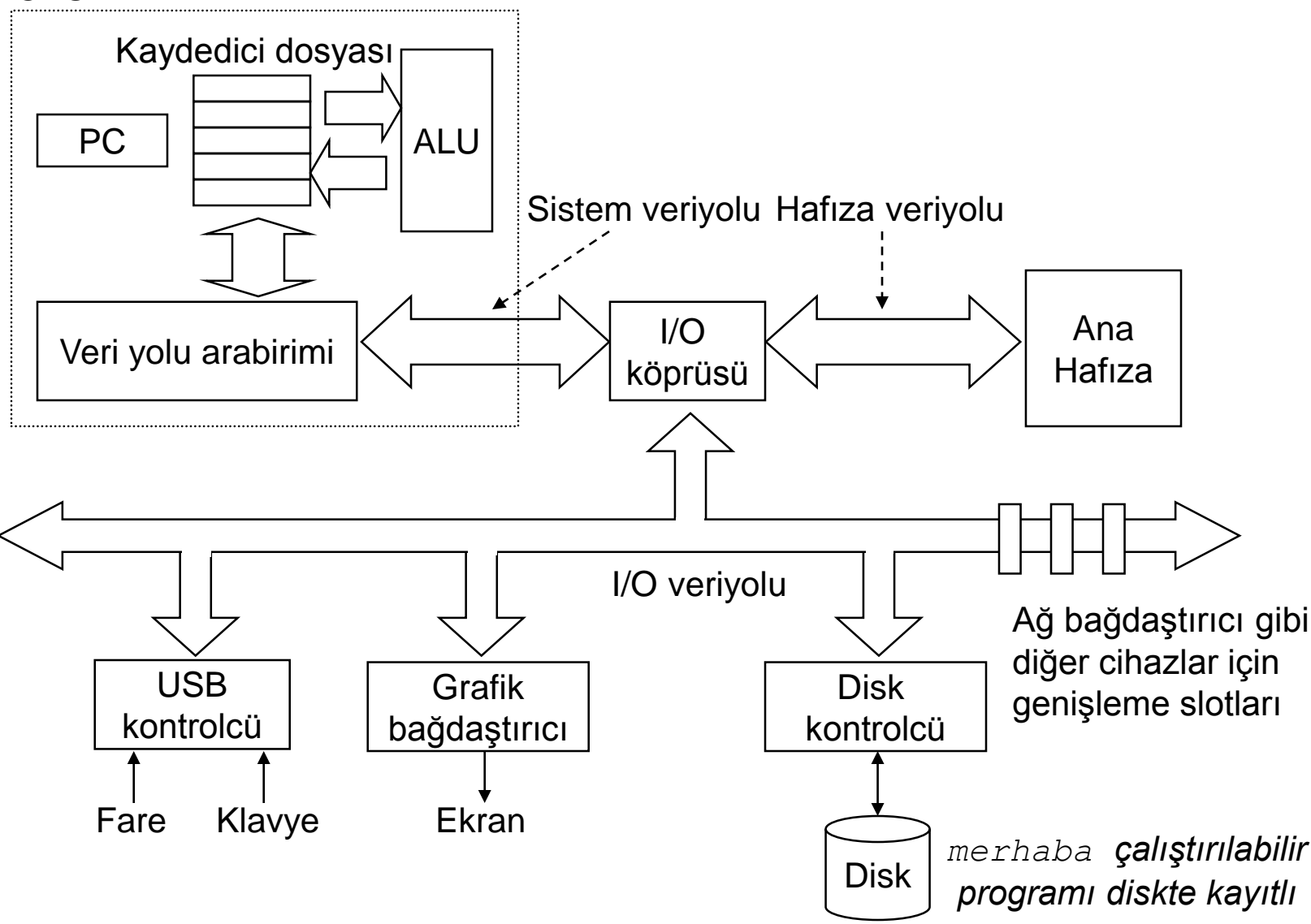
Source: www.LookupTables.com

```
linux> gcc -o merhaba merhaba.c
```





CPU



CPU

Kaydedici dosyas

PC

ALU

Sistem veriyolu Hafıza veriyolu

Veri yolu arabirimi

I/O
koptüsü

Ana
Hafıza

"merhaba"

I/O veriyolu

USB
kontrolcü

Grafik
bağdaştırıcı

Disk
kontrolcü

Ağ bağdaştırıcı gibi
diğer cihazlar için
genişleme slotları

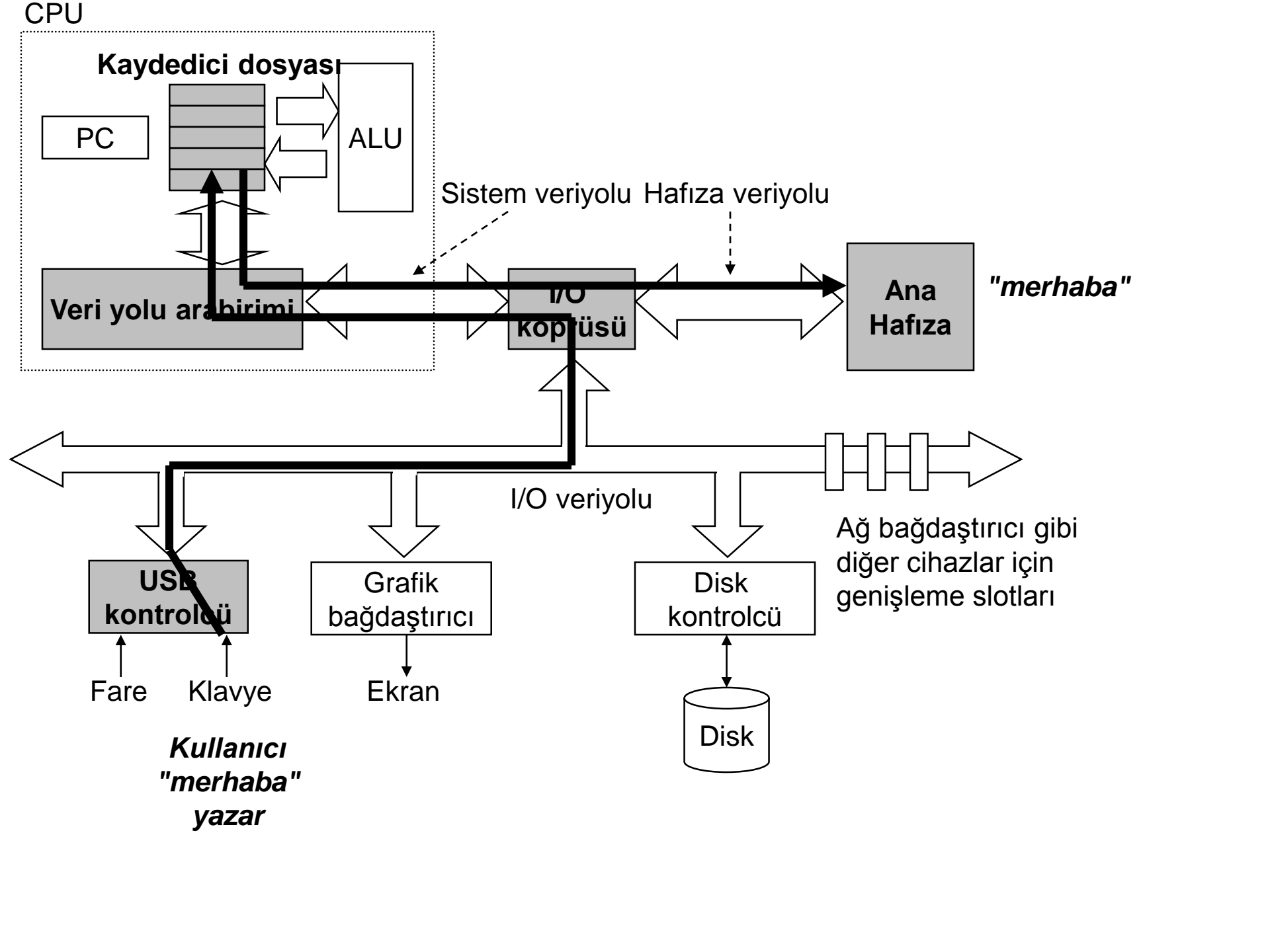
Fare

Klavye

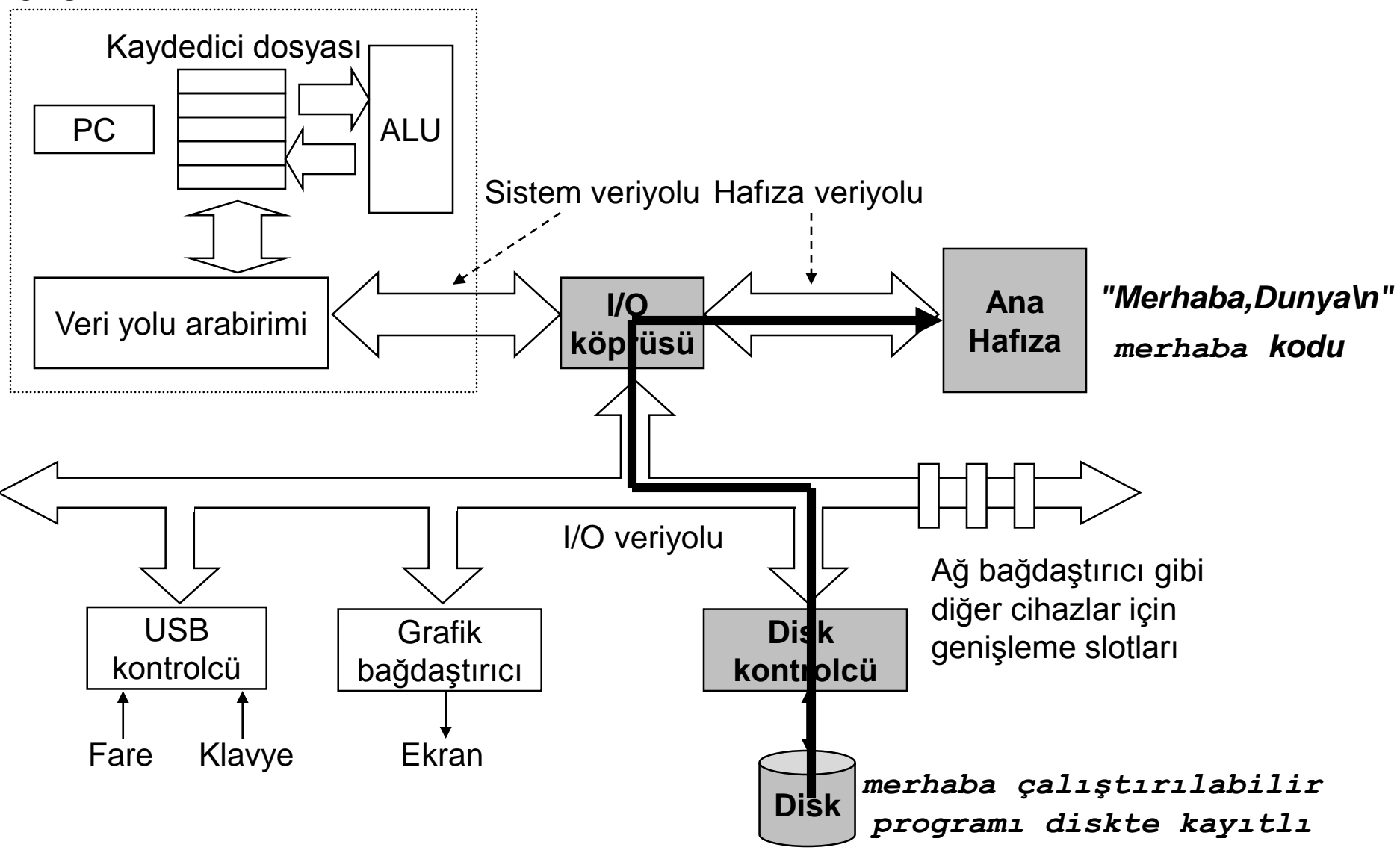
Ekran

Disk

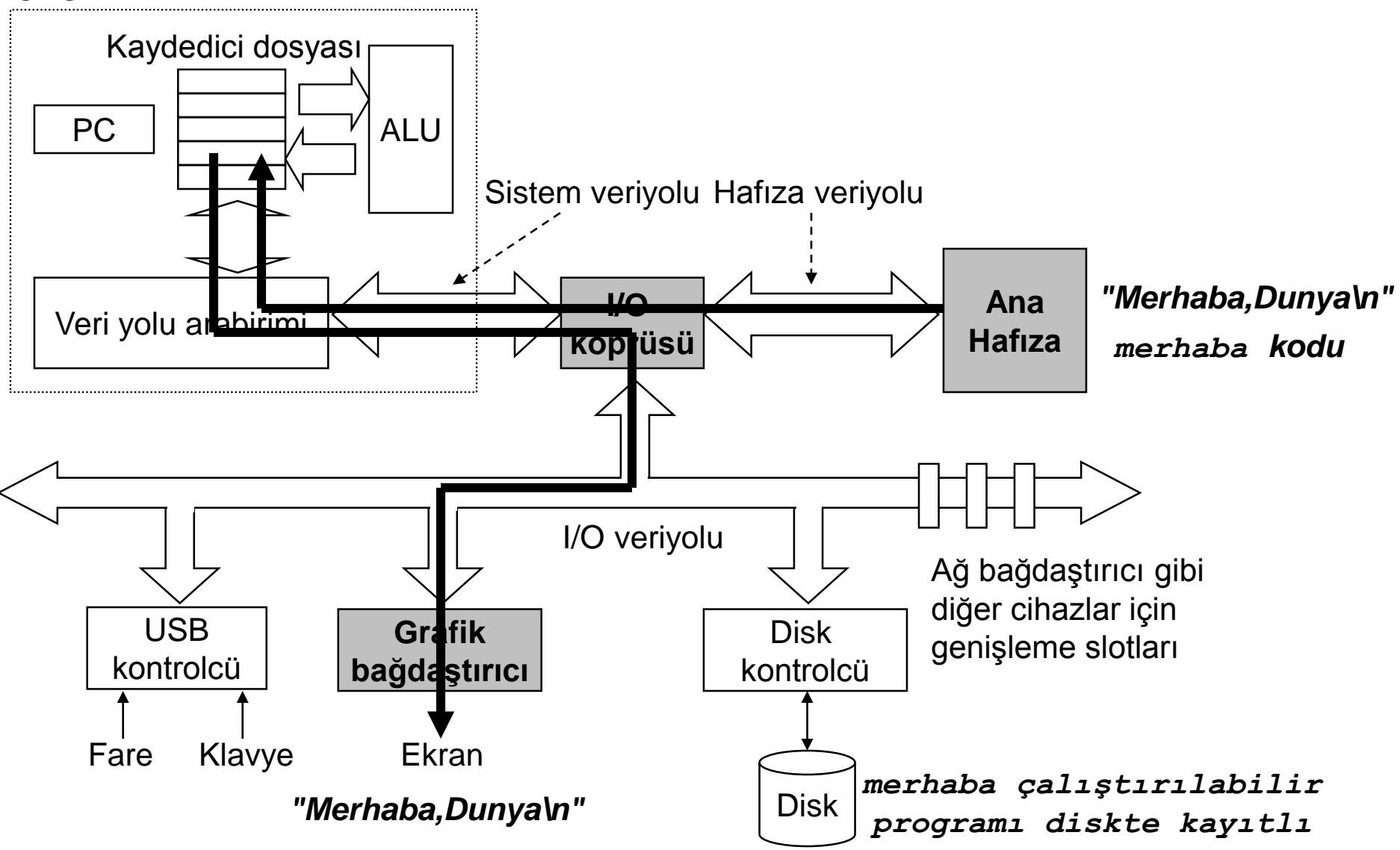
Kullanıcı
"merhaba"
yazar



CPU

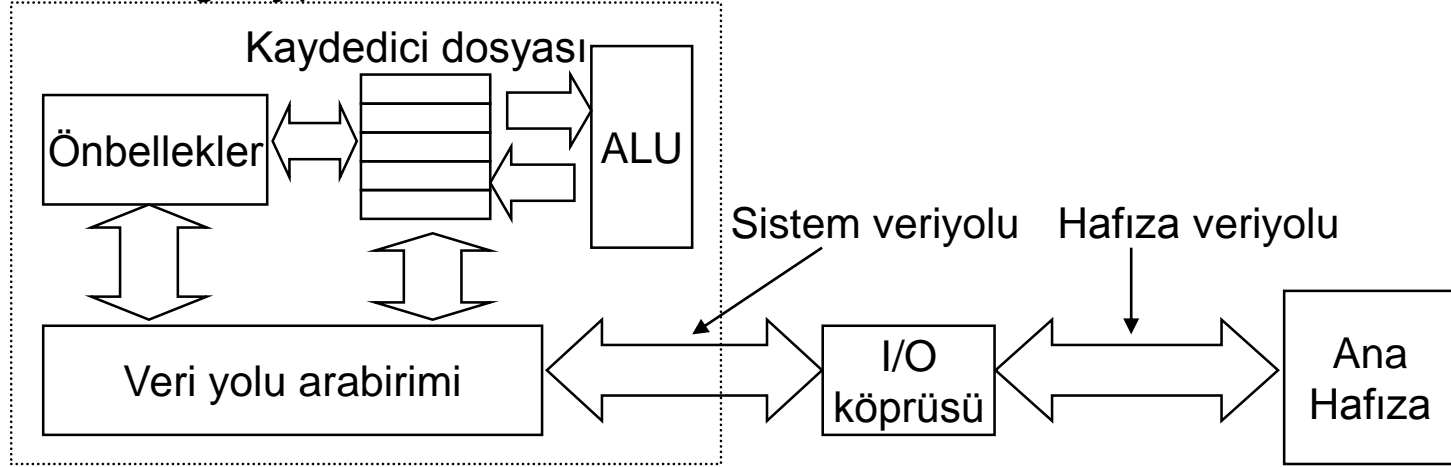


CPU



Önbellek

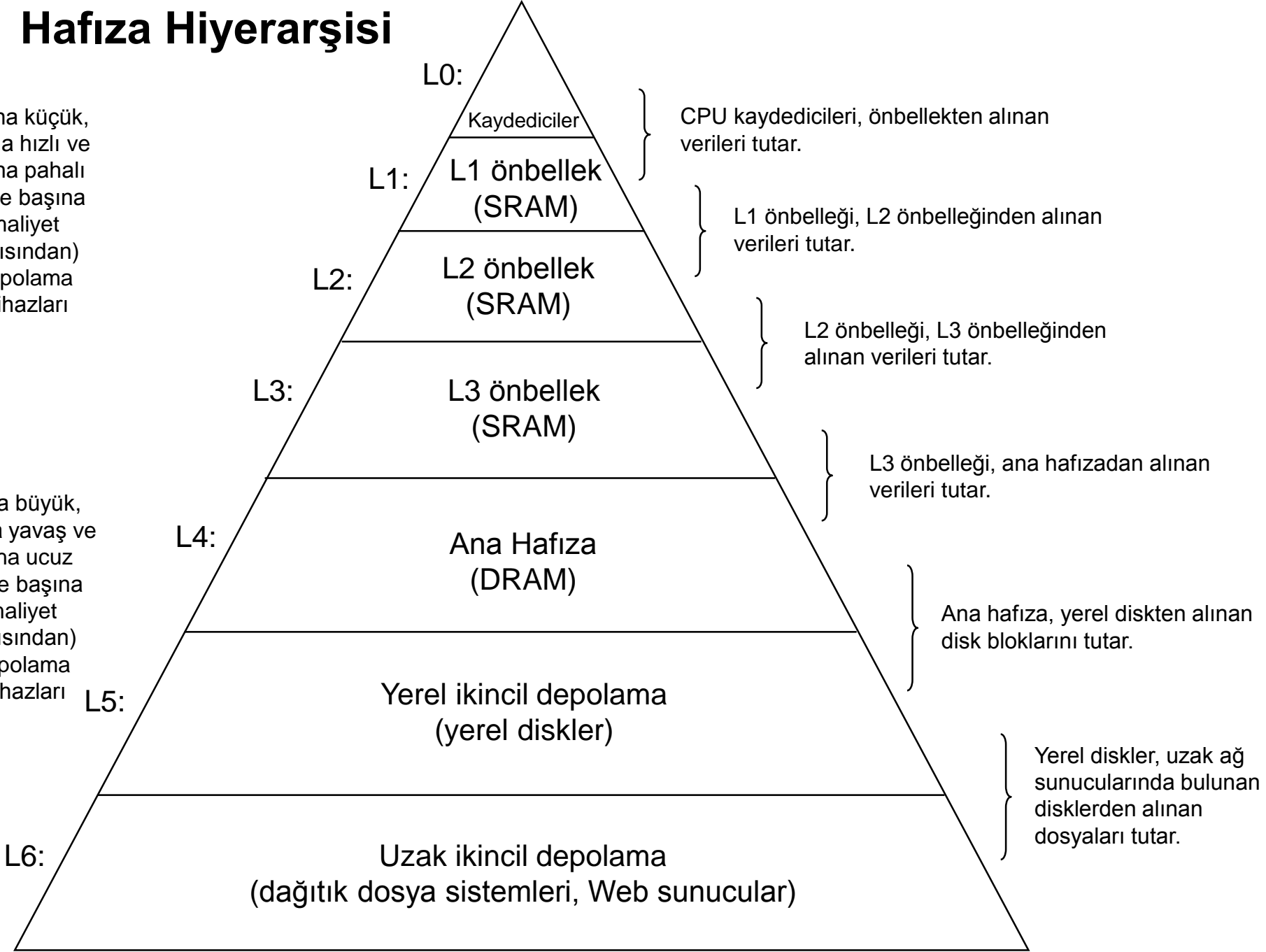
CPU entegre çipi



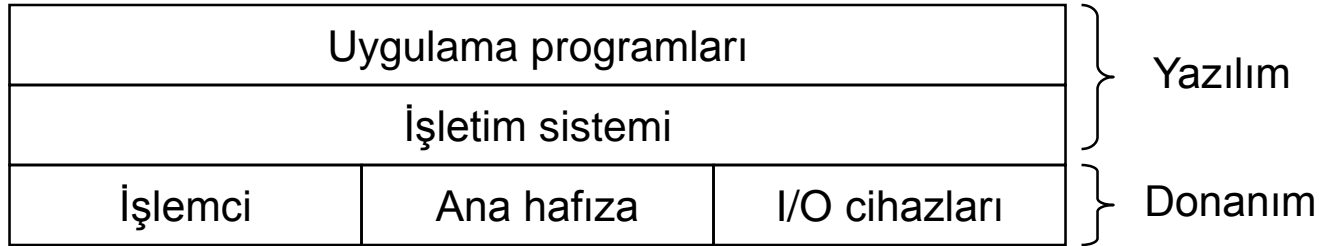
Hafıza Hiyerarşisi

Daha küçük,
daha hızlı ve
daha pahalı
(byte başına
maliyet
açısından)
depolama
cihazları

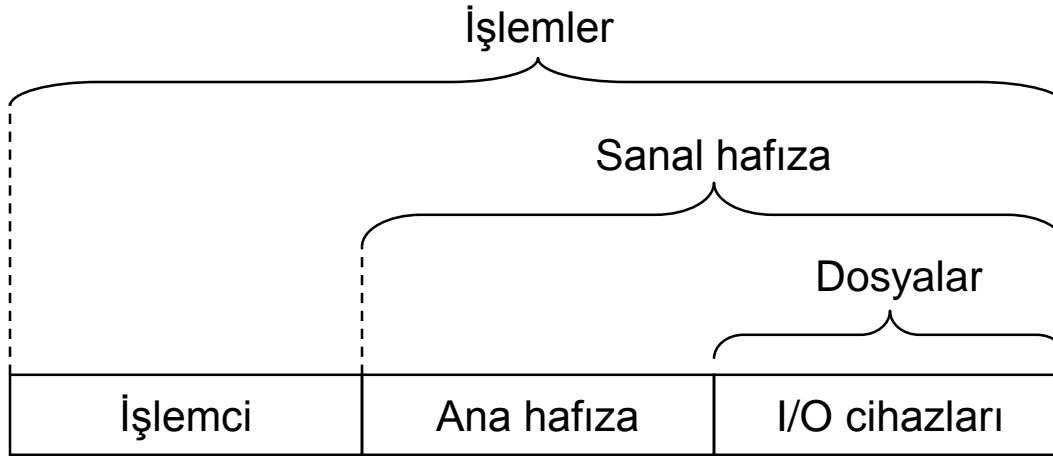
Daha büyük,
daha yavaş ve
daha ucuz
(byte başına
maliyet
açısından)
depolama
cihazları



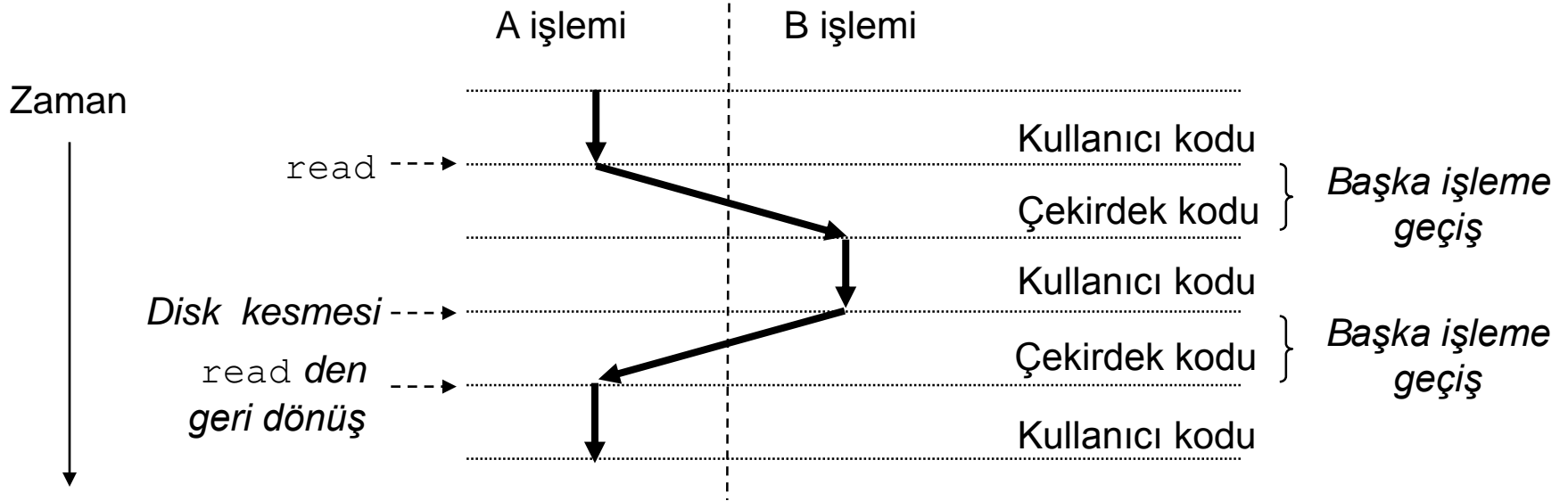
Donanım İşletim Sistemi Tarafından Yönetilir



Abstraction-Soyutlama

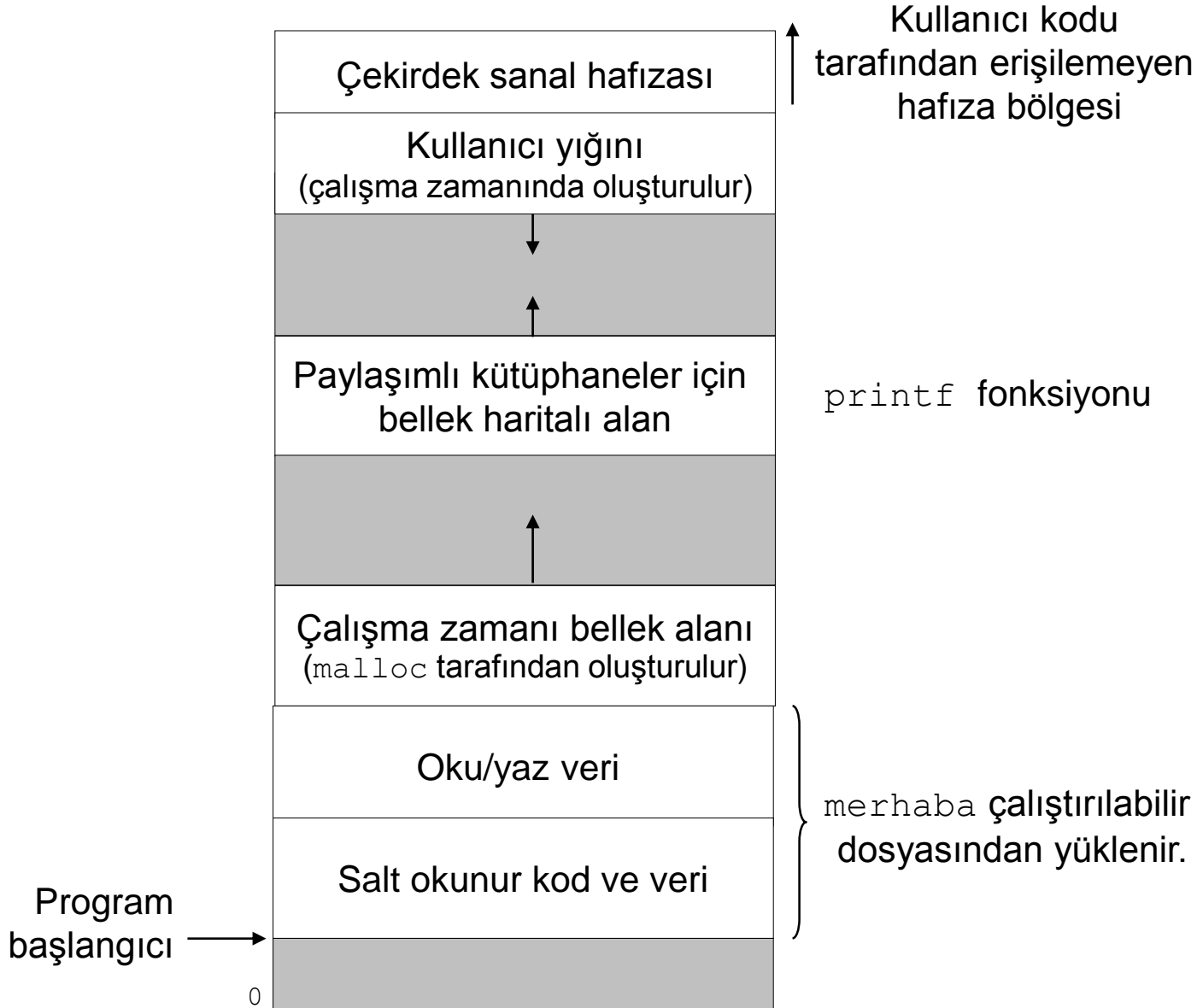


İşletim sisteminin bir işlemden başka işleme geçişi (Context Switch)

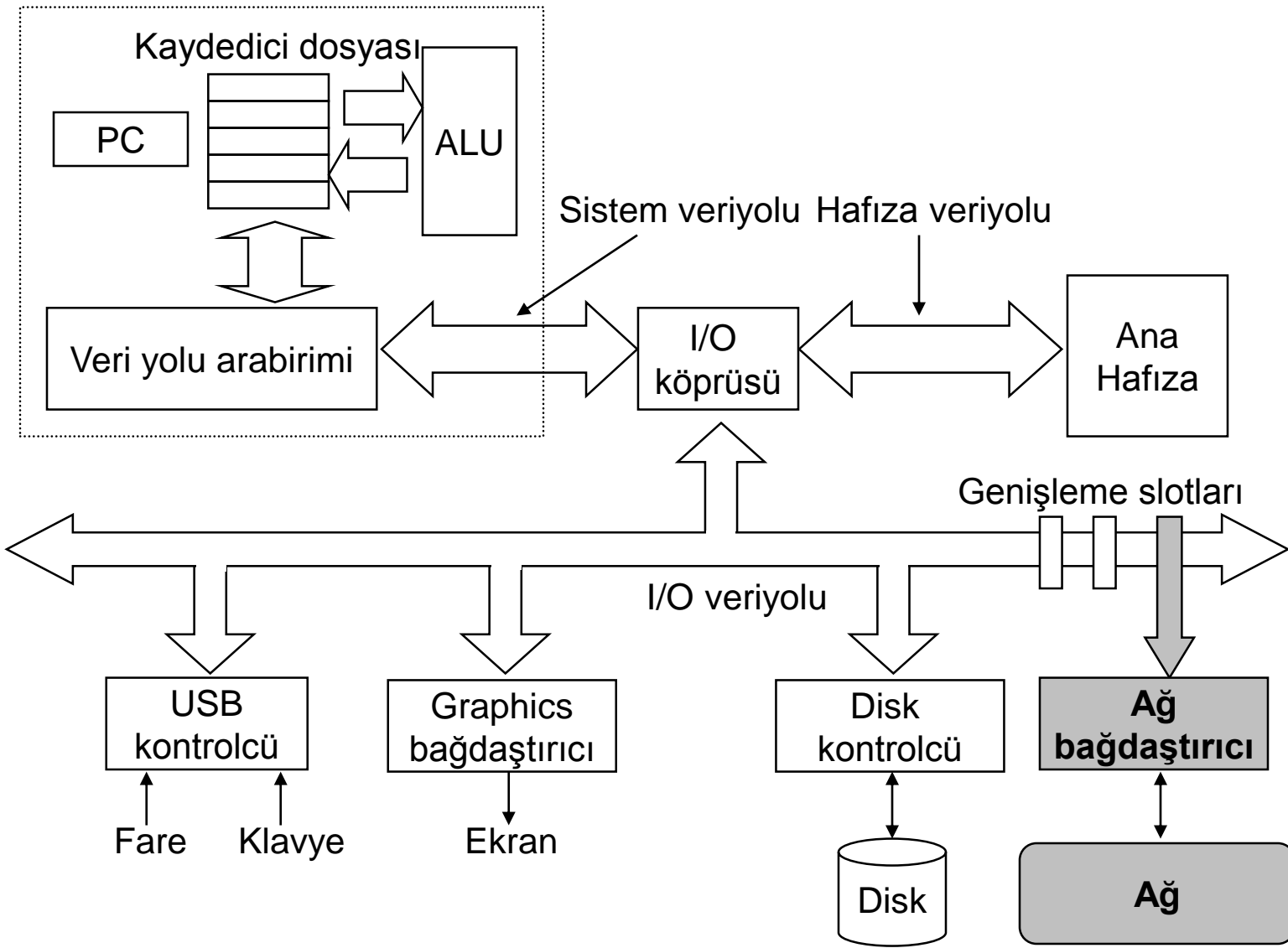


İş parçacığı, yani Thread?

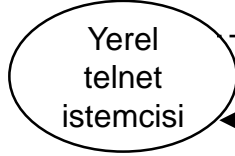
İşlem Sanal adres alanı



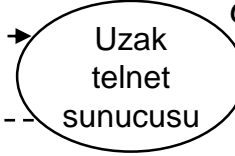
CPU



1. Kullanıcı klavyeye
"merhaba" yazar.



2. İstemci "merhaba"
karakter dizisini telnet
sunucusuna gönderir.



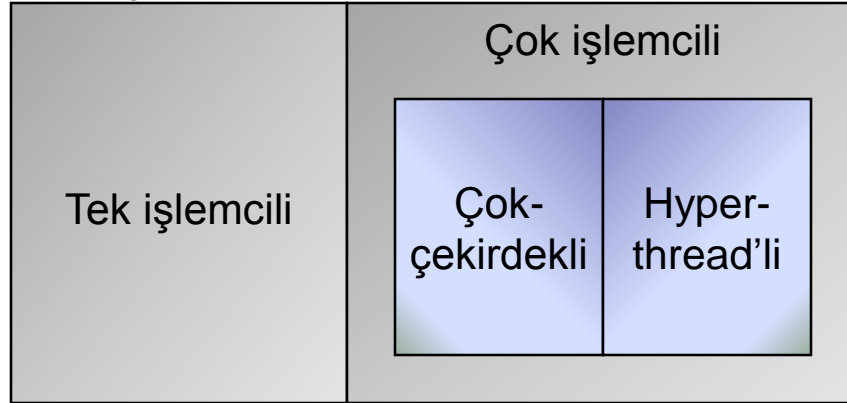
3. Sunucu "merhaba" karakter
dizisini, merhaba programını
çalıştıracak ve çıktıyı
telnet sunucusuna
yönlendirecek olan konsola
gönderir.

4. Telnet sunucusu
"Merhaba, Dünya\n" karakter
dizisini istemciye gönderir.

5. İstemci ekrana
"Merhaba, Dünya\n"
karakter dizisini yazar.

Tek çekirdek-Çok çekirdek

Tüm işlemciler



CPU entegre paketi

