

[4-Bit ALU] Bill-of-Materials BOM [v7.0]							
#	Category	Component Name /Value	Function / Specification	Qty	Unit Cost	Total Cost	Source
1	ICs	74HC283	4 bit Binary Full Adder with Fast Carry - Original	1	28.00 ₺	28.00 ₺	RAM
2	ICs	74HC08	Quad 2 Input AND Gates - Original	1	15.00 ₺	15.00 ₺	RAM
3	ICs	74HC32	Quad 2 Input OR Gate - Original	1	15.00 ₺	15.00 ₺	RAM
4	ICs	74HC86	QUAD 2 INPUT XOR GATE - Original [Logic XOR, Subtraction, & Overflow Flag]	2	15.00 ₺	30.00 ₺	RAM
5	ICs	CD4511	CD4511 - CMOS BCD to 7-Segment Latch Decoder Drivers	2	25.00 ₺	50.00 ₺	RAM
6	ICs	NE555P	NE555P - Timer IC - Original	2	8.00 ₺	16.00 ₺	RAM
7	ICs	74HC04	NOT Logic Inverter - Original	2	15.00 ₺	30.00 ₺	RAM
8	ICs	74HC00	Quad 2 input NAND Gates - Original [Use for Zero Flag logic]	1	15.00 ₺	15.00 ₺	RAM
9	ICs	74HC02	Quad 2 input NOR gates - Original [Use for Zero Flag logic]	1	15.00 ₺	15.00 ₺	RAM
10	ICs	74HC153	Dual 4:1 Line Multiplexer - Original	2	25.00 ₺	50.00 ₺	RAM
11	Prototyping	Breadboard 830 Tie-points	MB102	2	35.00 ₺	70.00 ₺	Lampatronic
12	Prototyping	Breadboard 400 Tie-Point	400 tie points	2	25.00 ₺	50.00 ₺	Lampatronic
13	Prototyping	Jumper Wire 10cm	Male-to-Male (1 wire)	50	0.70 ₺	35.00 ₺	Lampatronic
14	Prototyping	Jumper Wire 20cm	Male-to-Male (1 wire)	50	0.75 ₺	37.50 ₺	Lampatronic
15	Prototyping	Jumper Wire 30cm	Male-to-Male (1 wire)	30	0.90 ₺	27.00 ₺	Lampatronic
16	Prototyping	Breadboard Wire U Shape	Shield Breadboard Jumper Wires (140 Wire)	2	50.00 ₺	100.00 ₺	Lampatronic
17	Prototyping	Buck Converter LM2596S (3A)	Step Down Voltage Converter 3A	1	45.00 ₺	45.00 ₺	RAM
18	Input/Output	TTP223 Touch Button	TTP223 Capacitive Touch Button Sensor Module	2	15.00 ₺	30.00 ₺	RAM
19	Input/Output	DIP Switch 1 Way	1-way (inputs A, B, opcode, Write Enable A, B)	2	3.00 ₺	6.00 ₺	RAM
20	Input/Output	DIP Switch 2 Way	2-way (inputs A, B, opcode, Write Enable A, B)	2	4.00 ₺	8.00 ₺	RAM
21	Input/Output	DIP Switch 4-way	4-way (inputs A, B, opcode, Write Enable A, B)	4	5.00 ₺	20.00 ₺	RAM
22	Input/Output	LED Orange B1010G	4-bit OUTPUT (Result)	6	1.50 ₺	9.00 ₺	RAM
23	Input/Output	LED Yellow KB2755YW	Zero & Sign Flags	4	1.50 ₺	6.00 ₺	RAM
24	Input/Output	LED Red KB2655EW	Carry & Overflow Flags	4	1.50 ₺	6.00 ₺	RAM
25	Input/Output	LED Blue B1010UB	Flags Spare	3	1.50 ₺	4.50 ₺	RAM
26	Input/Output	LED Spacer Mount (Length: 7mm)	C, O, Z, S Flags and Power Indicator	10	0.30 ₺	3.00 ₺	Lampatronic
27	Input/Output	LED Spacer Mount (Length: 11mm)	C, O, Z, S Flags and Power Indicator	10	0.35 ₺	3.50 ₺	Lampatronic
28	Input/Output	LED 3MM Clear (Red)	Power Indicator, Control Unit Status. (Show which Opcode is active).	5	0.50 ₺	2.50 ₺	Lampatronic
29	Input/Output	LED 3MM Clear (Green)	Power Indicator, Control Unit Status. (Show which Opcode is active).	5	0.50 ₺	2.50 ₺	Lampatronic
30	Input/Output	LED 3mm (Yellow)	Clock ticks	5	0.50 ₺	2.50 ₺	Lampatronic
31	Input/Output	7-Segment Common CATHODE 0.5"	Single Digit 7 Segment 0.5 Inch Com. Cathode - RED	2	4.25 ₺	8.50 ₺	Lampatronic
32	Input/Output	Resistor Network 220Ω x 4	5pins	3	3.00 ₺	9.00 ₺	RAM
33	Input/Output	Resistor Network 220Ω x 8	9pins	1	4.00 ₺	4.00 ₺	RAM
34	Input/Output	Resistor Network 1KΩ x 4	5pins	1	3.00 ₺	3.00 ₺	RAM
35	Input/Output	Resistor Network 10KΩ x 4	5pins	5	3.00 ₺	15.00 ₺	RAM
36	Input/Output	Resistor Network 10KΩ x 8	9pins	2	4.00 ₺	8.00 ₺	RAM
37	Input/Output	Resistor 330 Ohm	330 Ohm 1/4W (2pcs/1qty) (LED limit)	10	0.30 ₺	3.00 ₺	Lampatronic
38	Input/Output	Resistor 1K Ohm	1K ohm - 1/4W (2pcs/1qty) (For Clock circuit)	10	0.30 ₺	3.00 ₺	Lampatronic
39	Input/Output	Resistor 10K Ohm	10k Ohm 1/4W (2pcs/1qty) (Pull-up/down)	20	0.30 ₺	6.00 ₺	Lampatronic
40	Input/Output	Resistor 470K Ohm	470K ohm - 1/4W (2pcs/1qty) (Sets Pulse length)	10	0.30 ₺	3.00 ₺	Lampatronic
41	Input/Output	Top Pot 100K Ohm	Top Adjust Potentiometer 100KΩ	2	2.50 ₺	5.00 ₺	RAM
42	Power/Misc	Capacitor Ceramic 0.1uF (104)	0.1uF (Decoupling)	40	0.25 ₺	10.00 ₺	RAM
43	Power/Misc	Capacitor Electrolytic 10uF 25v	Local Bulk (one/power_rail)	10	0.75 ₺	7.50 ₺	RAM
44	Power/Misc	Capacitor Electrolytic 1000uF 25v	System Bulk	5	2.00 ₺	10.00 ₺	RAM
45	Power/Misc	Battery 9V TOSHIBA	MADE IN JAPAN	1	45.00 ₺	45.00 ₺	RAM
46	Power/Misc	Battery Case	Battery Case 9V + On/Off Switch	1	28.00 ₺	28.00 ₺	RAM
47	Power/Misc	Enclosure	Project Box	1		0.00 ₺	N/A
Subtotal						900.00 ₺	
GRAND TOTAL						900.00 ₺	

[4-Bit ALU] Bill-of-Materials BOM [v7.1]									
#	Category	Component Name / Value	Function / Specification	Qty	Unit Cost	Total Cost	Merchant Name	Source	
11	Prototyping	Breadboard 830 Tie-points	MB102	2	35.00 ₪	70.00 ₪	Lampatronic	https://lampatronics.com/product/breadboard-soldless-830-tie-points/	
12	Prototyping	Breadboard 400 Tie-Point	400 tie points	2	25.00 ₪	50.00 ₪	Lampatronic	https://lampatronics.com/product/breadboard-with-400-tie-point/	
13	Prototyping	Jumper Wire 10cm	Male-to-Male (1 wire)	50	0.70 ₪	35.00 ₪	Lampatronic	https://lampatronics.com/product/jumper-wire-10cm-male-to-male-1-wire/	
14	Prototyping	Jumper Wire 20cm	Male-to-Male (1 wire)	50	0.75 ₪	37.50 ₪	Lampatronic	https://lampatronics.com/product/jumper-wire-20cm-male-to-male-1-wire/	
15	Prototyping	Jumper Wire 30cm	Male-to-Male (1 wire)	30	0.90 ₪	27.00 ₪	Lampatronic	https://lampatronics.com/product/jumper-wire-30cm-male-to-male-1-wire/	
16	Prototyping	Breadboard Wire U Shape	Shield Breadboard Jumper Wires (140 Wire)	2	50.00 ₪	100.00 ₪	Lampatronic	https://lampatronics.com/product/u-shape-shield-breadboard-jumper-wires-140pcs/	
26	Input/Output	LED Spacer Mount (Length: 7mm)	C, O, Z, S Flags and Power Indicator	10	0.30 ₪	3.00 ₪	Lampatronic	https://lampatronics.com/product/led-spacer-mount-length-7mm/	
27	Input/Output	LED Spacer Mount (Length: 11mm)	C, O, Z, S Flags and Power Indicator	10	0.35 ₪	3.50 ₪	Lampatronic	https://lampatronics.com/product/led-spacer-mount-length-11mm/	
28	Input/Output	LED 3MM Clear (Red)	Power Indicator, Control Unit Status. (Show which Opcode is active).	5	0.50 ₪	2.50 ₪	Lampatronic	https://lampatronics.com/product/led-3mm-red/	
29	Input/Output	LED 3MM Clear (Green)	Power Indicator, Control Unit Status. (Show which Opcode is active).	5	0.50 ₪	2.50 ₪	Lampatronic	https://lampatronics.com/product/led-3mm-green/	
30	Input/Output	LED 3mm (Yellow)	Clock ticks	5	0.50 ₪	2.50 ₪	Lampatronic	https://lampatronics.com/product/led-3mm-yellow/	
31	Input/Output	7-Segment Common CATHODE 0.5"	Single Digit 7 Segment 0.5 Inch Com.Cathode -RED	2	4.25 ₪	8.50 ₪	Lampatronic	https://lampatronics.com/product/single-digit-7-segment-0-5-inch-com-cathode-red/	
37	Input/Output	Resistor 330 Ohm	330 Ohm 1/4W (2pcs/1qty) (LED limit)	10	0.30 ₪	3.00 ₪	Lampatronic	https://lampatronics.com/product/resistor-330-ohm-1-4w-4pcs/	
38	Input/Output	Resistor 1K Ohm	1K ohm – 1/4W (2pcs/1qty) (For Clock circuit)	10	0.30 ₪	3.00 ₪	Lampatronic	https://lampatronics.com/product/resistor-1k-ohm-1-4w-2pcs/	
39	Input/Output	Resistor 10K Ohm	10k Ohm 1/4W (2pcs/1qty) (Pull-up/down)	20	0.30 ₪	6.00 ₪	Lampatronic	https://lampatronics.com/product/resistor-10k-ohm-1-4w-4pcs/	
40	Input/Output	Resistor 470K Ohm	470K ohm – 1/4W (2pcs/1qty) (Sets Pulse length)	10	0.30 ₪	3.00 ₪	Lampatronic	https://lampatronics.com/product/resistor-470k-ohm-1-4w-4pcs/	
		GRAND TOTAL				357.00 ₪			

[4-Bit ALU] Bill-of-Materials BOM [v7.2]							
#	Category	Component Name / Value	Function / Specification	Qty	Unit Cost	Total Cost	Merchant Name Source
1	ICs	74HC283	4 bit Binary Full Adder with Fast Carry - Original	1	28.00 ₺	28.00 ₺	RAM https://www.ram-e-shop.com/shop/74hc283-ic-74283-4-bit-binary-full-adder-with-fast-carry-original-6445
2	ICs	74HC08	Quad 2 Input AND Gates - Original	1	15.00 ₺	15.00 ₺	RAM https://www.ram-e-shop.com/shop/74hc08-original-ic-7408-quad-2-input-and-gates-original-6892
3	ICs	74HC32	Quad 2 Input OR Gate - Original	1	15.00 ₺	15.00 ₺	RAM https://www.ram-e-shop.com/shop/74hc32-original-ic-7432-quad-2-input-or-gate-original-6201
4	ICs	74HC86	QUAD 2 INPUT XOR GATE - Original [Logic XOR, Subtraction, & Overflow Flag]	2	15.00 ₺	30.00 ₺	RAM https://www.ram-e-shop.com/shop/74hc86-ic-7486-quad-2-input-exclusive-or-xor-gate-original-6166
5	ICs	CD4511	CD4511 - CMOS BCD to 7-Segment Latch Decoder Drivers	2	25.00 ₺	50.00 ₺	RAM https://www.ram-e-shop.com/shop/cd4511-cd4511-cmos-bcd-to-7-segment-latch-decoder-drivers-6058
6	ICs	NE555P	NE555P - Timer IC - Original	2	8.00 ₺	16.00 ₺	RAM https://www.ram-e-shop.com/shop/ne555-original-ne555p-timer-ic-original-5546
7	ICs	74HC04	NOT Logic Inverter - Original	2	15.00 ₺	30.00 ₺	RAM https://www.ram-e-shop.com/shop/74hc04-original-ic-7404-not-logic-inverter-original-6172
8	ICs	74HC00	Quad 2 input NAND Gates - Original [Use for Zero Flag logic]	1	15.00 ₺	15.00 ₺	RAM https://www.ram-e-shop.com/shop/74hc00-original-ic-7400-quad-2-input-nand-gates-original-6204
9	ICs	74HC02	Quad 2 input NOR gates - Original [Use for Zero Flag logic]	1	15.00 ₺	15.00 ₺	RAM https://www.ram-e-shop.com/shop/74hc02-ic-7402-quad-2-input-nor-gates-original-5646
10	ICs	74HC153	Dual 4:1 Line Multiplexer - Original	2	25.00 ₺	50.00 ₺	RAM https://www.ram-e-shop.com/shop/74hc153-ic-74153-dual-4-to-1-line-multiplexer-original-6779
17	Prototyping	Buck Converter LM2596S (3A)	Step Down Voltage Converter 3A	1	45.00 ₺	45.00 ₺	RAM https://www.ram-e-shop.com/shop/dc-dc-100-dc-step-down-voltage-converter-adjustable-3a-lm2596s-4-38vdc-to-1-5-35vdc-sku-dc100-7257
18	Input/Output	TTP223 Touch Button	TTP223 Capacitive Touch Button Sensor Module	2	15.00 ₺	30.00 ₺	RAM https://www.ram-e-shop.com/shop/kit-touch-red-1-kit-touch-red-switch-8098
19	Input/Output	DIP Switch 1 Way	1-way (inputs A, B, opcode, Write Enable A, B)	2	3.00 ₺	6.00 ₺	RAM https://www.ram-e-shop.com/shop/dip-1way-dip-switch-1-way-6037
20	Input/Output	DIP Switch 2 Way	2-way (inputs A, B, opcode, Write Enable A, B)	2	4.00 ₺	8.00 ₺	RAM https://www.ram-e-shop.com/shop/dip-2way-dip-switch-2-way-6247
21	Input/Output	DIP Switch 4-way	4-way (inputs A, B, opcode, Write Enable A, B)	4	5.00 ₺	20.00 ₺	RAM https://www.ram-e-shop.com/shop/dip-4way-dip-switch-4-way-6020
22	Input/Output	LED Orange B1010G	4-bit OUTPUT (Result)	6	1.50 ₺	9.00 ₺	RAM https://www.ram-e-shop.com/shop/7s-b1010g-led-light-bar-orange-b1010g-8751
23	Input/Output	LED Yellow KB2755YW	Zero & Sign Flags	4	1.50 ₺	6.00 ₺	RAM https://www.ram-e-shop.com/shop/7s-kb2755yw-led-light-bar-yellow-kb2755yw-8750
24	Input/Output	LED Red KB2655EW	Carry & Overflow Flags	4	1.50 ₺	6.00 ₺	RAM https://www.ram-e-shop.com/shop/7s-kb2655ew-led-light-bar-red-kb2655ew-8749
25	Input/Output	LED Blue B1010UB	Flags Spare	3	1.50 ₺	4.50 ₺	RAM https://www.ram-e-shop.com/shop/7s-b1010ub-led-light-bar-blue-b1010ub-8753
32	Input/Output	Resistor Network 220Ω x 4	5pins	3	3.00 ₺	9.00 ₺	RAM https://www.ram-e-shop.com/shop/resistor-array-220-5pin-resistor-network-220o-x-4-5pins-6815
33	Input/Output	Resistor Network 220Ω x 8	9pins	1	4.00 ₺	4.00 ₺	RAM https://www.ram-e-shop.com/shop/resistor-array-220-5pin-resistor-network-220o-x-8-9pins-6817
34	Input/Output	Resistor Network 1KΩ x 4	5pins	1	3.00 ₺	3.00 ₺	RAM https://www.ram-e-shop.com/shop/resistor-array-1k-5pin-resistor-network-1ko-x-4-5pins-6814
35	Input/Output	Resistor Network 10KΩ x 4	5pins	5	3.00 ₺	15.00 ₺	RAM https://www.ram-e-shop.com/shop/resistor-array-10k-5pin-resistor-network-10ko-x-4-5pins-6813
36	Input/Output	Resistor Network 10KΩ x 8	9pins	2	4.00 ₺	8.00 ₺	RAM https://www.ram-e-shop.com/shop/resistor-array-10k-resistor-network-10ko-x-8-9pins-5802
41	Input/Output	Top Pot 100K Ohm	Top Adjust Potentiometer 100KΩ	2	2.50 ₺	5.00 ₺	RAM https://www.ram-e-shop.com/shop/pot-100k-small-top-adjust-potentiometer-100ko-5838
42	Power/Misc	Capacitor Ceramic 0.1uF (104)	0.1uF (Decoupling)	40	0.25 ₺	10.00 ₺	RAM https://www.ram-e-shop.com/shop/c-pf-104-ceramic-capacitor-pf104-100nf-25v-6240
43	Power/Misc	Capacitor Electrolytic 10uF 25v	Local Bulk (one/power_rail)	10	0.75 ₺	7.50 ₺	RAM https://www.ram-e-shop.com/shop/c-100u25v-capacitor-10uf-25v-6095
44	Power/Misc	Capacitor Electrolytic 1000uF 25v	System Bulk	5	2.00 ₺	10.00 ₺	RAM https://www.ram-e-shop.com/shop/c-1000u25v-capacitor-1000uf-25v-6102
45	Power/Misc	Battery 9V TOSHIBA	MADE IN JAPAN	1	45.00 ₺	45.00 ₺	RAM https://www.ram-e-shop.com/shop/battery9v-toshiba-battery-9v-toshiba-8761
46	Power/Misc	Battery Case	Battery Case 9V + On/Off Switch	1	28.00 ₺	28.00 ₺	RAM https://www.ram-e-shop.com/shop/battery-case-9v-onoff-battery-case-9v-on-off-switch-7051
GRAND TOTAL						543.00 ₺	