МИНИСТЕРСТВО НАУКИ И ВЫСШЕГО ОБРАЗОВАНИЯ РОССИЙСКОЙ ФЕДЕРАЦИИ

Федеральное государственное автономное образовательное учреждение высшего образования

Санкт-Петербургский национальный исследовательский университет ИТМО

Мегафакультет трансляционных информационных технологий

Факультет информационных технологий и программирования

Лабораторная работа №8

По дисциплине «Аппаратное обеспечение вычислительных систем»

Вариант № 3

Выполнил студент группы №M3107
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Проверил
Повышев В. В.

Санкт-Петербург

2025

Программа для проверки:

Адрес	Код команды	Мнемоника	Комментарий
0000	4001	...	Число 4001
0001	4000	ADD 00	Добавляет в аккумулятор число 4001
0002	D001	...	Если в А число больше 16383, то СК=0001
0003	F000	HLT	стоп

Теоретическая таблица

СчМК до выборки МК	ВМК	СК	РА	РК	РД	А	С	БР	N	Z	СчМК
0	0	1	0	0	0	0	0	0	0	0	1
1	300	1	0	0	0	0	0	1	0	0	2
2	4001	1	1	0	0	0	0	1	0	0	3
3	311	1	1	0	4000	0	0	2	0	0	4
4	4004	2	1	0	4000	0	0	2	0	0	5
5	100	2	1	0	4000	0	0	4000	0	0	6
6	4003	2	1	4000	4000	0	0	4000	0	0	7
7	AF0C	2	1	4000	4000	0	0	4000	0	0	00C
00C	AB1D	2	1	4000	4000	0	0	4000	0	0	01D
01D	EF2D	2	1	4000	4000	0	0	4000	0	0	01E
01E	100	2	1	4000	4000	0	0	4000	0	0	01F
01F	4001	2	0	4000	4000	0	0	4000	0	0	20
20	EE27	2	0	4000	4000	0	0	4000	0	0	27
27	1	2	0	4000	4001	0	0	0	0	0	28
28	AD2B	2	0	4000	4001	0	0	0	0	0	02B
02B	AC3C	2	0	4000	4001	0	0	0	0	0	03C
03C	1100	2	0	4000	4001	0	0	4001	0	0	03D
03D	4075	2	0	4000	4001	4001	0	4001	0	0	03E
03E	838F	2	0	4000	4001	4001	0	4001	0	0	08F
08F	C591	2	0	4000	4001	4001	0	4001	0	0	90
90	83F5	2	0	4000	4001	4001	0	4001	0	0	0F5
0F5	8788	2	0	4000	4001	4001	0	4001	0	0	88
88	4008	2	0	4000	4001	4001	0	4001	0	0	89
89	8301	2	0	4000	4001	4001	0	4001	0	0	1
1	300	2	0	4000	4001	4001	0	2	0	0	2

2	4001	2	2	4000	4001	4001	0	2	0	0	3
3	311	2	2	4000	D001	4001	0	3	0	0	4
4	4004	3	2	4000	D001	4001	0	3	0	0	5
5	100	3	2	4000	D001	4001	0	D001	0	0	6
6	4003	3	2	D001	D001	4001	0	D001	0	0	7
7	AF0C	3	2	D001	D001	4001	0	D001	0	0	8
8	AE0C	3	2	D001	D001	4001	0	D001	0	0	9
9	AD0C	3	2	D001	D001	4001	0	D001	0	0	00C
00C	AB1D	3	2	D001	D001	4001	0	D001	0	0	01D
01D	EF2D	3	2	D001	D001	4001	0	D001	0	0	02D
02D	AE30	3	2	D001	D001	4001	0	D001	0	0	02E
02E	AC47	3	2	D001	D001	4001	0	D001	0	0	02F
02F	83D0	3	2	D001	D001	4001	0	D001	0	0	0D0
0D0	1	3	2	D001	D001	4001	0	0	0	0	0D1
0D1	FED3	3	2	D001	D001	4001	0	0	0	0	0D3
0D3	C28F	3	2	D001	D001	4001	0	0	0	0	0D4
0D4	100	3	2	D001	D001	4001	0	D001	0	0	0D5
0D5	4004	1	2	D001	D001	4001	0	D001	0	0	0D6
0D6	838F	1	2	D001	D001	4001	0	D001	0	0	08F
08F	C591	1	2	D001	D001	4001	0	D001	0	0	90
90	83F5	1	2	D001	D001	4001	0	D001	0	0	0F5
0F5	8788	1	2	D001	D001	4001	0	D001	0	0	88
88	4008	1	2	D001	D001	4001	0	D001	0	0	89
89	8301	1	2	D001	D001	4001	0	D001	0	0	1
1	300	1	2	D001	D001	4001	0	1	0	0	2
2	4001	1	1	D001	D001	4001	0	1	0	0	3
3	311	1	1	D001	4000	4001	0	2	0	0	4
4	4004	2	1	D001	4000	4001	0	2	0	0	5
5	100	2	1	D001	4000	4001	0	4000	0	0	6
6	4003	2	1	4000	4000	4001	0	4000	0	0	7
7	AF0C	2	1	4000	4000	4001	0	4000	0	0	00C
00C	AB1D	2	1	4000	4000	4001	0	4000	0	0	01D
01D	EF2D	2	1	4000	4000	4001	0	4000	0	0	01E
01E	100	2	1	4000	4000	4001	0	4000	0	0	01F
01F	4001	2	0	4000	4000	4001	0	4000	0	0	20
20	EE27	2	0	4000	4000	4001	0	4000	0	0	27
27	1	2	0	4000	4001	4001	0	0	0	0	28
28	AD2B	2	0	4000	4001	4001	0	0	0	0	02B
02B	AC3C	2	0	4000	4001	4001	0	0	0	0	03C
03C	1100	2	0	4000	4001	4001	0	8002	0	0	03D
03D	4075	2	0	4000	4001	8002	0	8002	1	0	03E
03E	838F	2	0	4000	4001	8002	0	8002	1	0	08F
08F	C591	2	0	4000	4001	8002	0	8002	1	0	90
90	83F5	2	0	4000	4001	8002	0	8002	1	0	0F5
0F5	8788	2	0	4000	4001	8002	0	8002	1	0	88
88	4008	2	0	4000	4001	8002	0	8002	1	0	89

89	8301	2	0	4000	4001	8002	0	8002	1	0	1
1	300	2	0	4000	4001	8002	0	2	1	0	2
2	4001	2	2	4000	4001	8002	0	2	1	0	3
3	311	2	2	4000	D001	8002	0	3	1	0	4
4	4004	3	2	4000	D001	8002	0	3	1	0	5
5	100	3	2	4000	D001	8002	0	D001	1	0	6
6	4003	3	2	D001	D001	8002	0	D001	1	0	7
7	AF0C	3	2	D001	D001	8002	0	D001	1	0	8
8	AE0C	3	2	D001	D001	8002	0	D001	1	0	9
9	AD0C	3	2	D001	D001	8002	0	D001	1	0	00C
00C	AB1D	3	2	D001	D001	8002	0	D001	1	0	01D
01D	EF2D	3	2	D001	D001	8002	0	D001	1	0	02D
02D	AE30	3	2	D001	D001	8002	0	D001	1	0	02E
02E	AC47	3	2	D001	D001	8002	0	D001	1	0	02F
02F	83D0	3	2	D001	D001	8002	0	D001	1	0	0D0
0D0	1	3	2	D001	D001	8002	0	0	1	0	0D1
0D1	FED3	3	2	D001	D001	8002	0	0	1	0	0D2
0D2	BF8F	3	2	D001	D001	8002	0	0	1	0	0D3
0D3	C28F	3	2	D001	D001	8002	0	0	1	0	08F
08F	C591	3	2	D001	D001	8002	0	0	1	0	90
90	83F5	3	2	D001	D001	8002	0	0	1	0	0F5
0F5	8788	3	2	D001	D001	8002	0	0	1	0	88
88	4008	3	2	D001	D001	8002	0	0	1	0	89
89	8301	3	2	D001	D001	8002	0	0	1	0	1
1	300	3	2	D001	D001	8002	0	3	1	0	2
2	4001	3	3	D001	D001	8002	0	3	1	0	3
3	311	3	3	D001	F000	8002	0	4	1	0	4
4	4004	4	3	D001	F000	8002	0	4	1	0	5
5	100	4	3	D001	F000	8002	0	F000	1	0	6
6	4003	4	3	F000	F000	8002	0	F000	1	0	7

Практическая таблица

СчМК до выборки МК	ВМК	СК	РА	РК	РД	А	С	БР	N	Z	СчМК
0	0	1	0	0	0	0	0	0	0	0	1
1	300	1	0	0	0	0	0	1	0	0	2
2	4001	1	1	0	0	0	0	1	0	0	3
3	311	1	1	0	4000	0	0	2	0	0	4
4	4004	2	1	0	4000	0	0	2	0	0	5
5	100	2	1	0	4000	0	0	4000	0	0	6
6	4003	2	1	4000	4000	0	0	4000	0	0	7
7	AF0C	2	1	4000	4000	0	0	4000	0	0	00C
00C	AB1D	2	1	4000	4000	0	0	4000	0	0	01D
01D	EF2D	2	1	4000	4000	0	0	4000	0	0	01E

01E	100	2	1	4000	4000	0	0	4000	0	0	01F
01F	4001	2	0	4000	4000	0	0	4000	0	0	20
20	EE27	2	0	4000	4000	0	0	4000	0	0	27
27	1	2	0	4000	4001	0	0	0	0	0	28
28	AD2B	2	0	4000	4001	0	0	0	0	0	02B
02B	AC3C	2	0	4000	4001	0	0	0	0	0	03C
03C	1100	2	0	4000	4001	0	0	4001	0	0	03D
03D	4075	2	0	4000	4001	4001	0	4001	0	0	03E
03E	838F	2	0	4000	4001	4001	0	4001	0	0	08F
08F	C591	2	0	4000	4001	4001	0	4001	0	0	90
90	83F5	2	0	4000	4001	4001	0	4001	0	0	0F5
0F5	8788	2	0	4000	4001	4001	0	4001	0	0	88
88	4008	2	0	4000	4001	4001	0	4001	0	0	89
89	8301	2	0	4000	4001	4001	0	4001	0	0	1
1	300	2	0	4000	4001	4001	0	2	0	0	2
2	4001	2	2	4000	4001	4001	0	2	0	0	3
3	311	2	2	4000	D001	4001	0	3	0	0	4
4	4004	3	2	4000	D001	4001	0	3	0	0	5
5	100	3	2	4000	D001	4001	0	D001	0	0	6
6	4003	3	2	D001	D001	4001	0	D001	0	0	7
7	AF0C	3	2	D001	D001	4001	0	D001	0	0	8
8	AE0C	3	2	D001	D001	4001	0	D001	0	0	9
9	AD0C	3	2	D001	D001	4001	0	D001	0	0	00C
00C	AB1D	3	2	D001	D001	4001	0	D001	0	0	01D
01D	EF2D	3	2	D001	D001	4001	0	D001	0	0	02D
02D	AE30	3	2	D001	D001	4001	0	D001	0	0	02E
02E	AC47	3	2	D001	D001	4001	0	D001	0	0	02F
02F	83D0	3	2	D001	D001	4001	0	D001	0	0	0D0
0D0	1	3	2	D001	D001	4001	0	0	0	0	0D1
0D1	FED3	3	2	D001	D001	4001	0	0	0	0	0D3
0D3	C28F	3	2	D001	D001	4001	0	0	0	0	0D4
0D4	100	3	2	D001	D001	4001	0	D001	0	0	0D5
0D5	4004	1	2	D001	D001	4001	0	D001	0	0	0D6
0D6	838F	1	2	D001	D001	4001	0	D001	0	0	08F
08F	C591	1	2	D001	D001	4001	0	D001	0	0	90
90	83F5	1	2	D001	D001	4001	0	D001	0	0	0F5
0F5	8788	1	2	D001	D001	4001	0	D001	0	0	88
88	4008	1	2	D001	D001	4001	0	D001	0	0	89
89	8301	1	2	D001	D001	4001	0	D001	0	0	1
1	300	1	2	D001	D001	4001	0	1	0	0	2
2	4001	1	1	D001	D001	4001	0	1	0	0	3
3	311	1	1	D001	4000	4001	0	2	0	0	4
4	4004	2	1	D001	4000	4001	0	2	0	0	5
5	100	2	1	D001	4000	4001	0	4000	0	0	6
6	4003	2	1	4000	4000	4001	0	4000	0	0	7
7	AF0C	2	1	4000	4000	4001	0	4000	0	0	00C

00C	AB1D	2	1	4000	4000	4001	0	4000	0	0	01D
01D	EF2D	2	1	4000	4000	4001	0	4000	0	0	01E
01E	100	2	1	4000	4000	4001	0	4000	0	0	01F
01F	4001	2	0	4000	4000	4001	0	4000	0	0	20
20	EE27	2	0	4000	4000	4001	0	4000	0	0	27
27	1	2	0	4000	4001	4001	0	0	0	0	28
28	AD2B	2	0	4000	4001	4001	0	0	0	0	02B
02B	AC3C	2	0	4000	4001	4001	0	0	0	0	03C
03C	1100	2	0	4000	4001	4001	0	8002	0	0	03D
03D	4075	2	0	4000	4001	8002	0	8002	1	0	03E
03E	838F	2	0	4000	4001	8002	0	8002	1	0	08F
08F	C591	2	0	4000	4001	8002	0	8002	1	0	90
90	83F5	2	0	4000	4001	8002	0	8002	1	0	0F5
0F5	8788	2	0	4000	4001	8002	0	8002	1	0	88
88	4008	2	0	4000	4001	8002	0	8002	1	0	89
89	8301	2	0	4000	4001	8002	0	8002	1	0	1
1	300	2	0	4000	4001	8002	0	2	1	0	2
2	4001	2	2	4000	4001	8002	0	2	1	0	3
3	311	2	2	4000	D001	8002	0	3	1	0	4
4	4004	3	2	4000	D001	8002	0	3	1	0	5
5	100	3	2	4000	D001	8002	0	D001	1	0	6
6	4003	3	2	D001	D001	8002	0	D001	1	0	7
7	AF0C	3	2	D001	D001	8002	0	D001	1	0	8
8	AE0C	3	2	D001	D001	8002	0	D001	1	0	9
9	AD0C	3	2	D001	D001	8002	0	D001	1	0	00C
00C	AB1D	3	2	D001	D001	8002	0	D001	1	0	01D
01D	EF2D	3	2	D001	D001	8002	0	D001	1	0	02D
02D	AE30	3	2	D001	D001	8002	0	D001	1	0	02E
02E	AC47	3	2	D001	D001	8002	0	D001	1	0	02F
02F	83D0	3	2	D001	D001	8002	0	D001	1	0	0D0
0D0	1	3	2	D001	D001	8002	0	0	1	0	0D1
0D1	FED3	3	2	D001	D001	8002	0	0	1	0	0D2
0D2	BF8F	3	2	D001	D001	8002	0	0	1	0	0D3
0D3	C28F	3	2	D001	D001	8002	0	0	1	0	08F
08F	C591	3	2	D001	D001	8002	0	0	1	0	90
90	83F5	3	2	D001	D001	8002	0	0	1	0	0F5
0F5	8788	3	2	D001	D001	8002	0	0	1	0	88
88	4008	3	2	D001	D001	8002	0	0	1	0	89
89	8301	3	2	D001	D001	8002	0	0	1	0	1
1	300	3	2	D001	D001	8002	0	3	1	0	2
2	4001	3	3	D001	D001	8002	0	3	1	0	3
3	311	3	3	D001	F000	8002	0	4	1	0	4
4	4004	4	3	D001	F000	8002	0	4	1	0	5
5	100	4	3	D001	F000	8002	0	F000	1	0	6
6	4003	4	3	F000	F000	8002	0	F000	1	0	7