NAME: Ayesha Tassawer

Sap_id:55421

Submitted to: Ma'am Ayesha

LAB 9 SUBMISSION

CLASS WORK

Data Hex

Registers

Name	Width	Data
AC	16	0001
AR	12	E00
DR	16	F800
E	1	0
I	1	0
IR	16	E001
PC	12	006
S	1	1

AND.a ✕

```
1  START:
2  INP
3  STA NUM
4  INP
5  AND NUM
6  OUT
7  HLT
8
9  NUM: .data 1 0
```

Addr Hex   **Data** Hex

MAIN

Addr	Data
000	F800
001	6006
002	F800
003	0006
004	F400
005	E001
006	0000
007	0000
008	0000
009	0000
00A	0000
00B	0000
00C	0000
00D	0000
00E	0000
00F	0000
010	0000

```
EXECUTING...
Enter Inputs, the first of which must be an Integer: 1
Enter Inputs, the first of which must be an Integer: 1
Output: 1
EXECUTION HALTED NORMALLY due to the setting of the bit(s): [HALT-BIT]
```
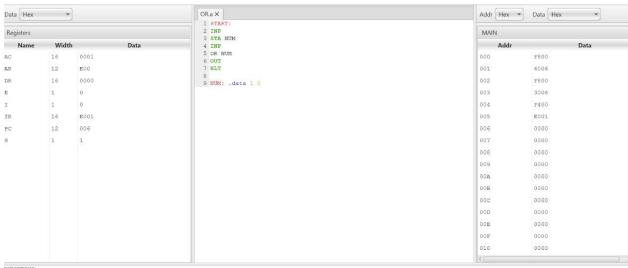
TASK 1 OR OPERATION

Data Hex

Registers

Name	Width	Data
AC	16	0001
AR	12	E00
DR	16	0000
E	1	0
I	1	0
IR	16	E001
PC	12	006
S	1	1

OR.a ✕

```
1  START:
2  INP
3  STA NUM
4  INP
5  OR NUM
6  OUT
7  HLT
8
9  NUM: .data 1 0
```

Addr Hex   **Data** Hex

MAIN

Addr	Data
000	F800
001	6006
002	F800
003	3006
004	F400
005	E001
006	0000
007	0000
008	0000
009	0000
00A	0000
00B	0000
00C	0000
00D	0000
00E	0000
00F	0000
010	0000

```
EXECUTING...
Enter Inputs, the first of which must be an Integer: 0
Enter Inputs, the first of which must be an Integer: 1
Output: 1
EXECUTION HALTED NORMALLY due to the setting of the bit(s): [HALT-BIT]
```

TASK 2 NAND OPERATION

Registers

Name	Width	Data
AC	16	FFFE
AR	12	E00
DR	16	0000
E	1	0
I	1	0
IR	16	E001
PC	12	006
S	1	1

```
1 START:
2     INP
3     STA NUM
4     INP
5     NAND NUM
6     OUT
7     HLT
8
9 NUM: .data 1 0
10
```

MAIN

Addr	Data
000	F800
001	6006
002	F800
003	4006
004	F400
005	E001
006	0000
007	0000
008	0000
009	0000
00A	0000
00B	0000
00C	0000
00D	0000
00E	0000
00F	0000
010	0000

```
EXECUTING...
Enter Inputs, the first of which must be an Integer: 1
Enter Inputs, the first of which must be an Integer: 1
Output:  -2
EXECUTION HALTED NORMALLY due to the setting of the bit(s): [HALT-BIT]
```
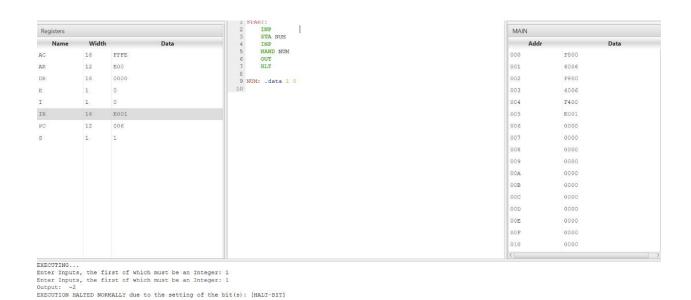
TASK 3 NOR OPERATION

Data Hex

Registers

Name	Width	Data
AC	16	FFFF
AR	12	E00
DR	16	0000
E	1	0
I	1	0
IR	16	E001
PC	12	006
S	1	1

NOR.a ×

```
1 START:
2     INP
3     STA NUM
4     INP
5     NOR NUM
6     OUT
7     HLT
8
9 NUM: .data 1 0
10
```

Addr Hex   Data Hex

MAIN

Addr	Data
000	F800
001	6006
002	F800
003	5006
004	F400
005	E001
006	0000
007	0000
008	0000
009	0000
00A	0000
00B	0000
00C	0000
00D	0000
00E	0000
00F	0000
010	0000

```
EXECUTING...
Enter Inputs, the first of which must be an Integer: 0
Enter Inputs, the first of which must be an Integer: 0
Output:  -1
EXECUTION HALTED NORMALLY due to the setting of the bit(s): [HALT-BIT]
```
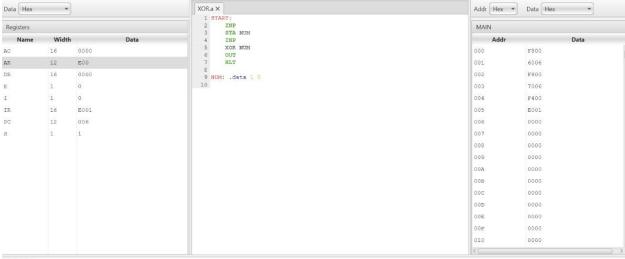
TASK 4 XOR OPERATION

```
Data  Hex          ▼          XOR.a ✕                        Addr  Hex  ▼   Data  Hex          ▼
                              1  START:
Registers                     2      INP                     MAIN
                              3      STA NUM
   Name    Width      Data    4      INP                        Addr           Data
AC        16      0000        5      XOR NUM                  000        F800
AR        12      E00         6      OUT                      001        6006
DR        16      0000        7      HLT                      002        F800
E         1       0           8                               003        7006
I         1       0           9  NUM: .data 1 0              004        F400
IR        16      E001        10                             005        E001
PC        12      006                                        006        0000
S         1       1                                          007        0000
                                                             008        0000
                                                             009        0000
                                                             00A        0000
                                                             00B        0000
                                                             00C        0000
                                                             00D        0000
                                                             00E        0000
                                                             00F        0000
                                                             010        0000
```
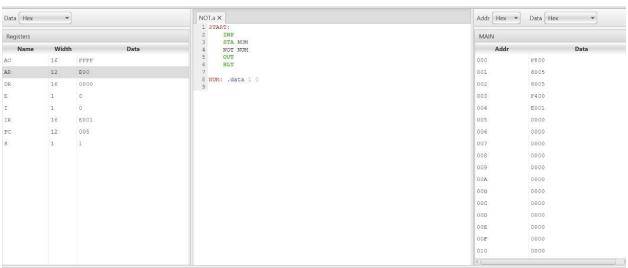
EXECUTING...
Enter Inputs, the first of which must be an Integer: 0
Enter Inputs, the first of which must be an Integer: 0
Output: 0
EXECUTION HALTED NORMALLY due to the setting of the bit(s): [HALT-BIT]

TASK 5 NOT OPERATION

```
Data  Hex          ▼          NOT.a ✕                        Addr  Hex  ▼   Data  Hex          ▼
                              1  START:
Registers                     2      INP                     MAIN
                              3      STA NUM
   Name    Width      Data    4      NOT NUM                    Addr           Data
AC        16      FFFF        5      OUT                      000        F800
AR        12      E00         6      HLT                      001        6005
DR        16      0000        7                               002        8005
E         1       0           8  NUM: .data 1 0              003        F400
I         1       0           9                               004        E001
IR        16      E001                                       005        0000
PC        12      005                                        006        0000
S         1       1                                          007        0000
                                                             008        0000
                                                             009        0000
                                                             00A        0000
                                                             00B        0000
                                                             00C        0000
                                                             00D        0000
                                                             00E        0000
                                                             00F        0000
                                                             010        0000
```

EXECUTING...
Enter Inputs, the first of which must be an Integer: 0
Output: -1
EXECUTION HALTED NORMALLY due to the setting of the bit(s): [HALT-BIT]