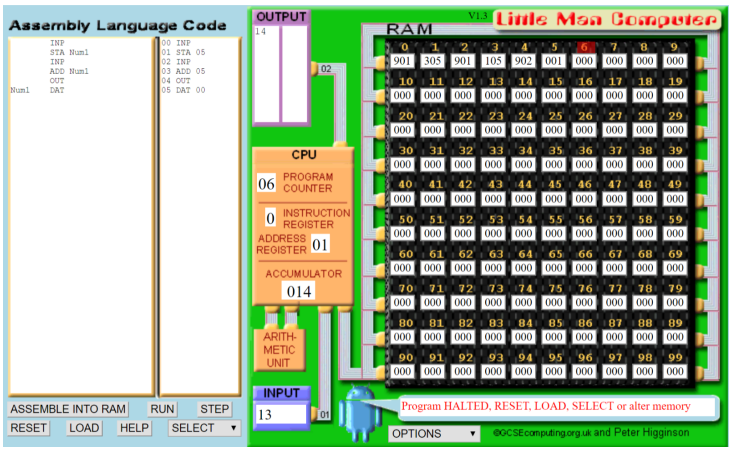
C6.2 Assembly Language Programming Task B Grummitt

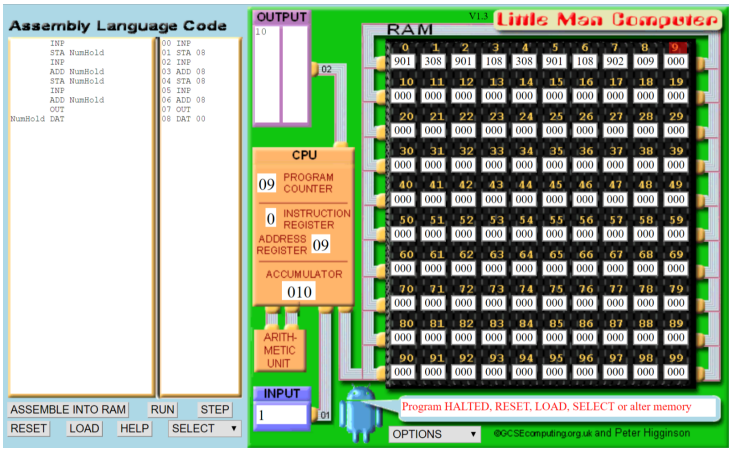
1. Take two numbers and add them together

```
//Input First number
INP
//Store first number in Num1
STA Num1
//Input Second Number
INP
//Add the first number to the second
ADD Num1
//Output the result
OUT
//Create a variable called Num1
Num1    DAT
```



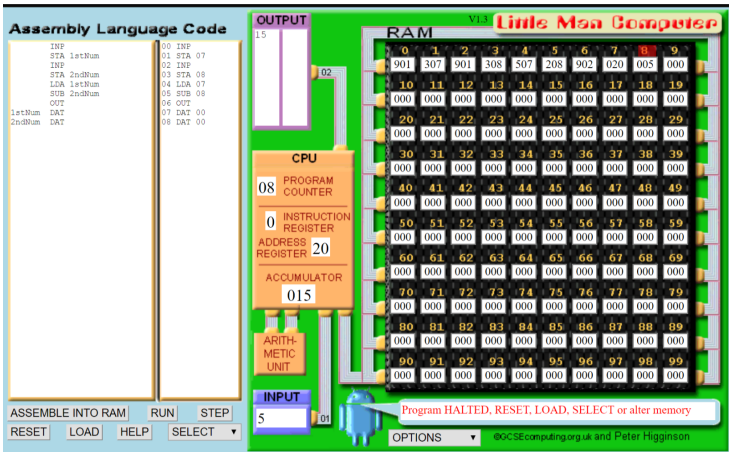
2. Input 3 numbers and add them together

```
//Input the first number
INP
//Store Number in NumHold
STA NumHold
//Input the second number
INP
//Add the Second Number to the value in numhold
ADD NumHold
//Store value in NumHold
STA NumHold
//Input the thrid number
INP
//Add 3rd number to value in numhold
ADD NumHold
//Output current number
OUT
//Create a variable called NumHold
NumHold DAT
```



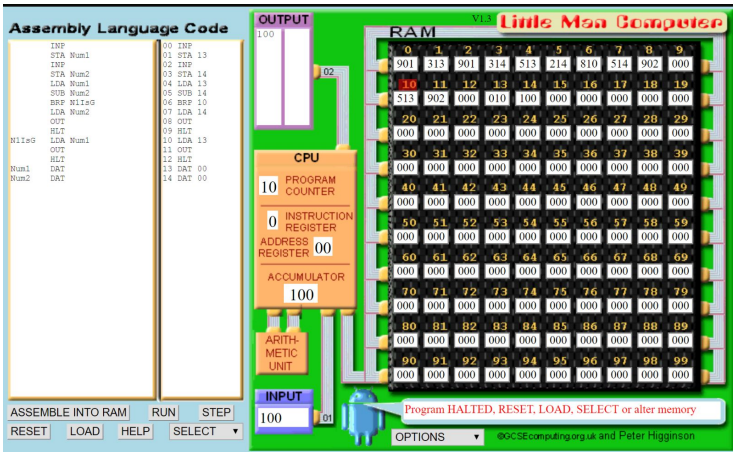
3.Input two numbers and subtract the second from the first

```
//Input 1st Number
INP
//Store value in 1stNum
STA 1stNum
//Input 2nd Number
INP
//Store value in 2ndNum
STA 2ndNum
//Load 1st Num
LDA 1stNum
//Subtract the 2ndNun
SUB 2ndNum
//Output result
OUT
//Create vaiable 1stNum
1stNum  DAT
//Create vaiable 2ndNum
2ndNum  DAT
```



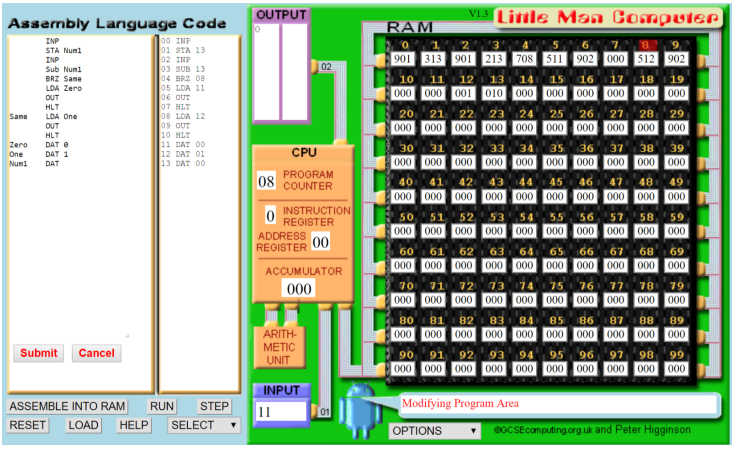
4. Input and compare two numbers, then output the larger one.

```
          //Input first number
          INP
          //Store input in Num1
          STA Num1
          //Input second number
          INP
          //Store input in Num2
          STA Num2
          //Load Num1
          LDA Num1
          //Subtract Num2 from Num1
          SUB Num2
          //Check If resulting number is positive
          //If it isnt go to N1IsG
          BRP N1IsG
          //Load Num2
          LDA Num2
          //Output Num2
          OUT
          //Stop Program
          HLT
          //Load Num1
N1IsG     LDA Num1
          //Output Num1
          OUT
          //Stop program
          HLT
          //Create Num1 Variable
Num1      DAT
          //Create Num2 Variable
Num2      DAT
```



5. Input and compare two numbers then outputs 1 if they are the same and 0 if they differ.

```
          //Input first number
          INP
          //Store input in Num1
          STA Num1
          //Input Second number
          INP
          //Subtract Num1 from current value
          Sub Num1
          //If result is zero goto same
          BRZ Same
          //Load Zero
          LDA Zero
          //OUT Zero
          OUT
          //Stop program
          HLT
          //Load One
Same      LDA One
          //Out One
          OUT
          //Stop program
          HLT
          //Set zero to value 0
```



```
Zero    DAT 0
        //Set one to value 1
One     DAT 1
        //Create variable Num1
Num1    DAT
```

6. Input a number. The program then loops from that number down to zero in iterations of 1.

```
        //Input Number
        INP
        //Store in Num1
        STA Num1
        //If Value = 0 goto same
Loop    BRZ Same
        //Output number
        OUT
        //Subtract one from number
        SUB One
        //Go back to point loop always
        BRA Loop
        //Output number
Same    OUT Num1
        //Set One to value 1
One     DAT 1
        //Create variable Num1
Num1    DAT
```