PROJECT REPORT

CSN 252

ALPHABETS

TEAM Members:

- Avvari Sreedhar - 19114016
- Rohith Mamidi - 19114051
- Sasi preetham - 19114062
- Jaideep Putta - 19114066
- Akanti Giri Nandan - 19115016

Project statement

To print all the alphabets repeatedly using assembly language (SIC INSTRUCTIONS) and simulate it using SIC tools.

Pseudo Code

1. Clear accumulator then store accumulator into (offset) a variable

2. Initialize a loop (to print A to Z in a line) and store the required character to print in the accumulator.

3. Wait for the device until it is ready and then write the required character into the device.

4. Increase the offset that corresponds to the next character and verify the loop termination condition i.e. offset < 26.

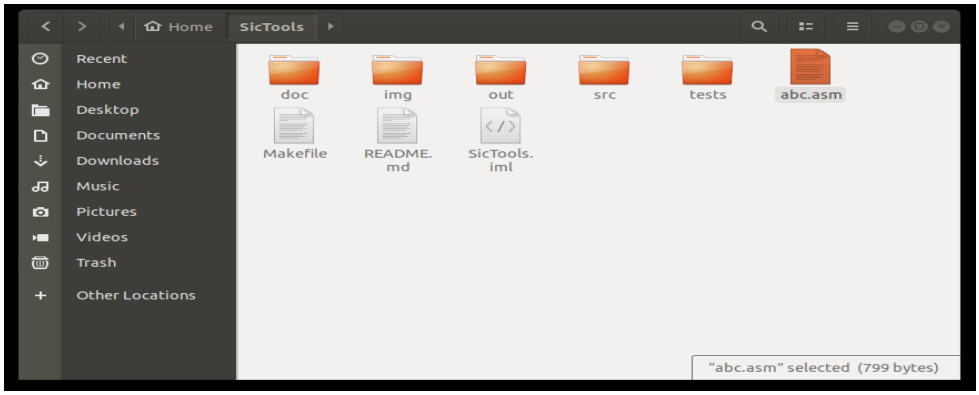
5. If the loop is terminated (i.e. Set of all alphabets were printed) store a newline character inorder to print the next repeated line in a fresh line and write to the device

6. Then jump to instruction 1 to clear the accumulator and repeat the same process.

SIC Assembly Code

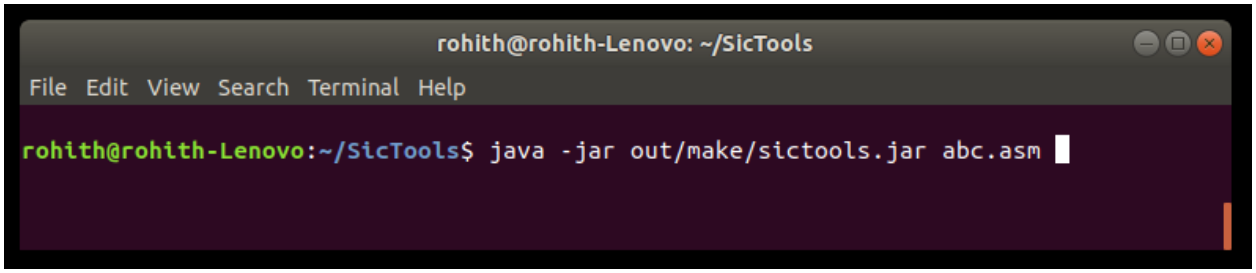
```
abc         START       0

repeat      CLEAR       A           .Clear the accumulator value
            STA         offset      .Stores accumulator into the offset

loop        LDA         offset      .Start of the loop
            ADD         asciiA      .Update accumulator for next alphabet

td1         TD          device      .Tests the device to update the equality flag
            JEQ         td1         .Wait until the device is ready
            WD          device      .Writes accumulator to device

            LDA         offset
            ADD         one         .Increase the offset by 1
            STA         offset
            COMP        count
            JLT         loop        .Jumps to the loop if offset < count(26)

            LDA         newline     .Update accumulator to newline character

td2         TD          device
            JEQ         td2
            WD          device      .Writes newline to device

            J           repeat      .Jump to beginning

. constants
device      BYTE  X'01'
newline     WORD  10
asciiA      WORD  65
count       WORD  26

. variables
offset      WORD  0
one         WORD  1
            END         loop
```

File Structure:

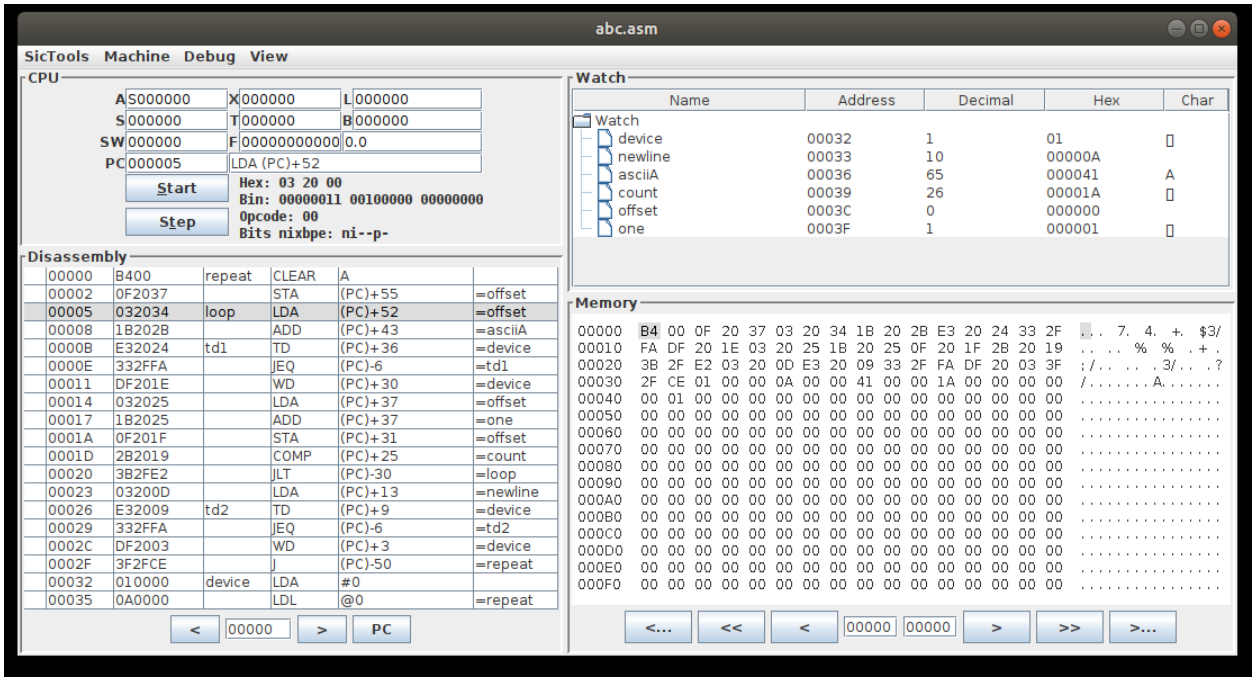


Source code:

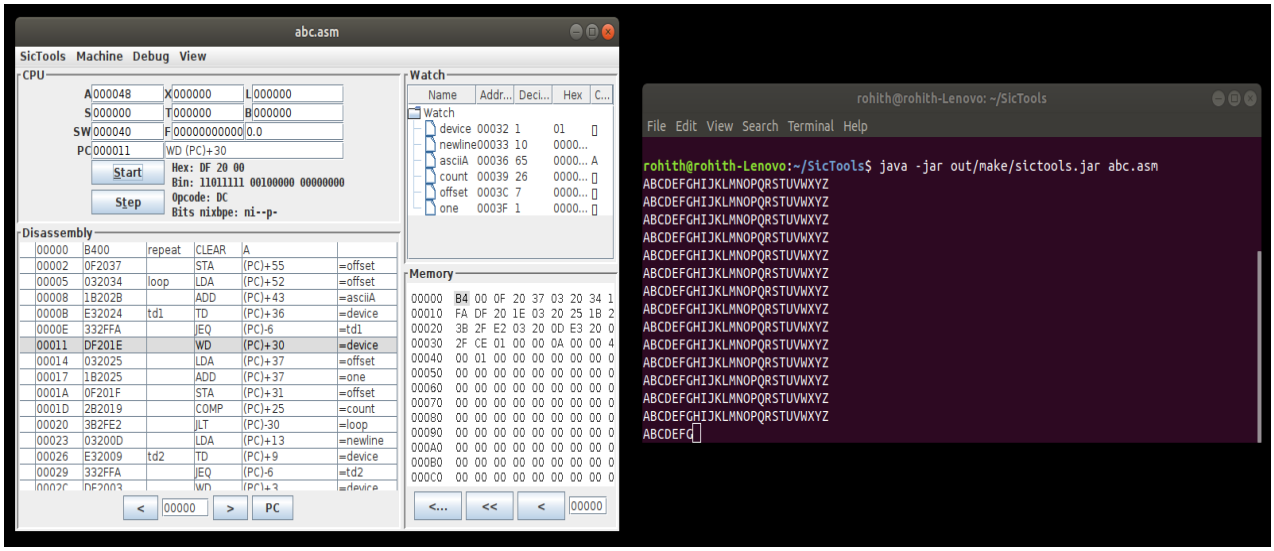
Starting the simulator via command line:

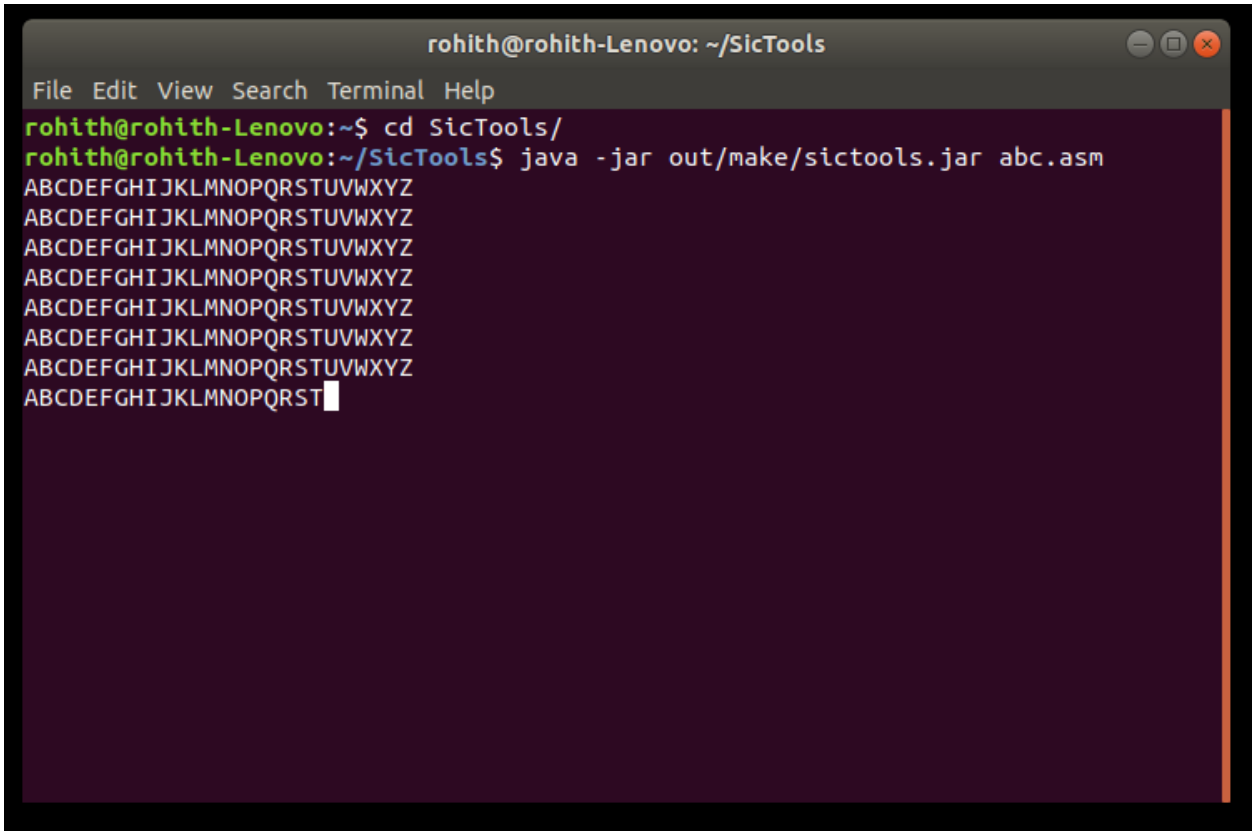


Simulating tool



Screenshots of running program:





Project Repository

Repository Name: alphabet

Github Link: https://github.com/AvvariSreedhar/alphabet/tree/main