Faculty of Science, Engineering and Technology

Computer Systems

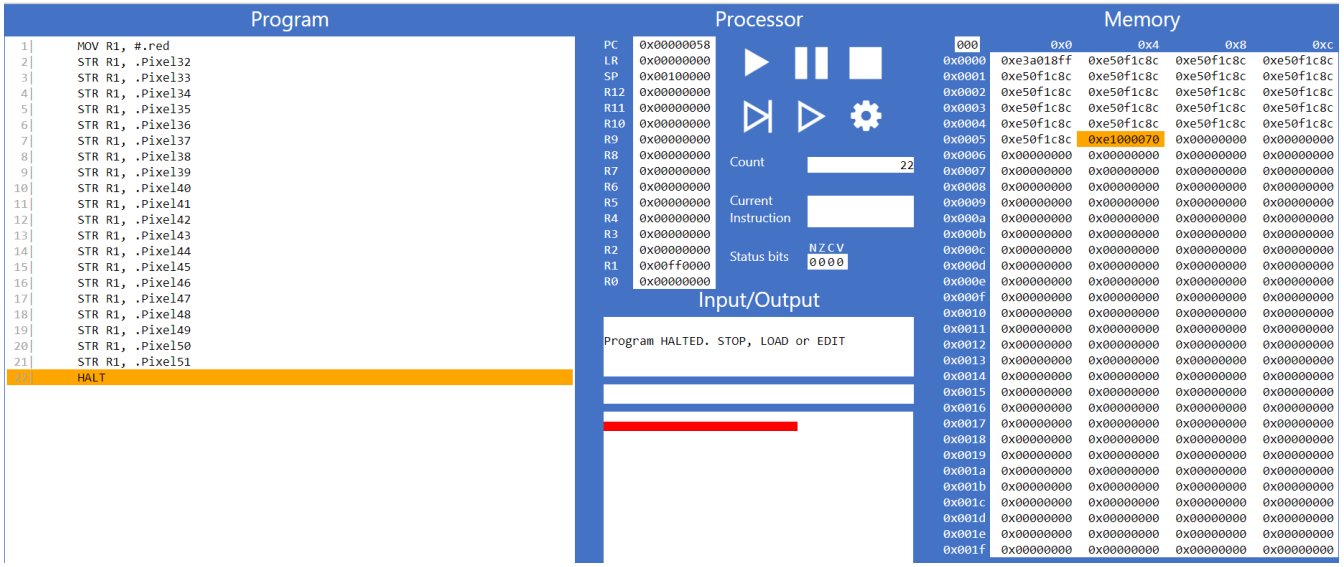
Week 9

Overview

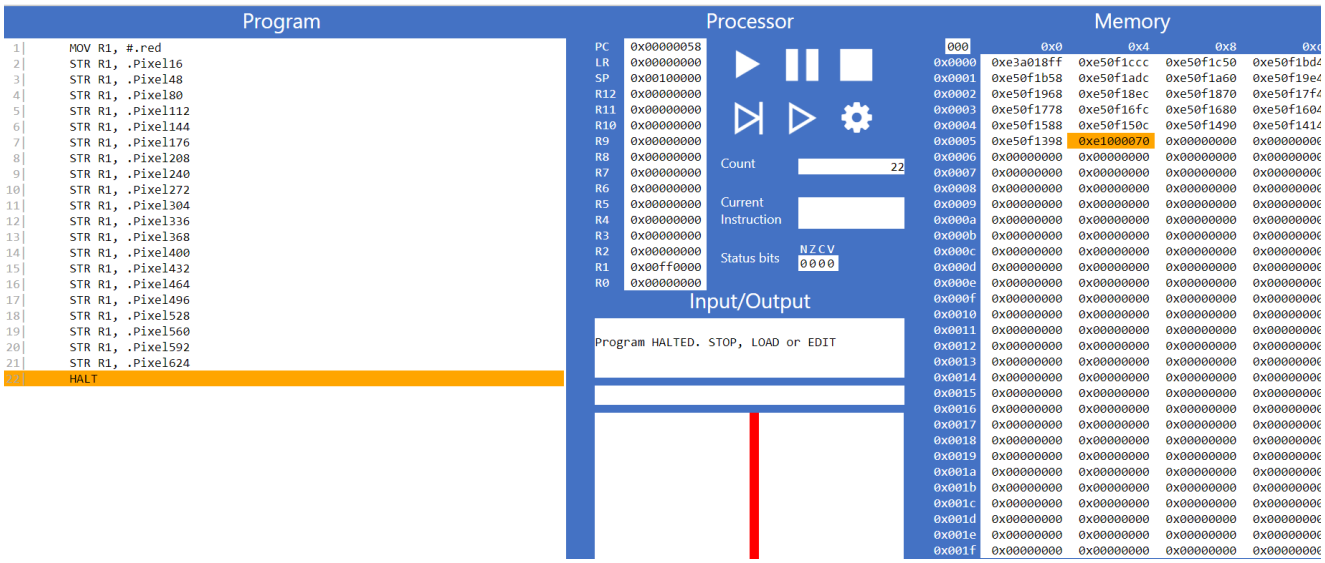
Name: Le Quang Hai
Student ID: 104175779

Exercise 9.1.1

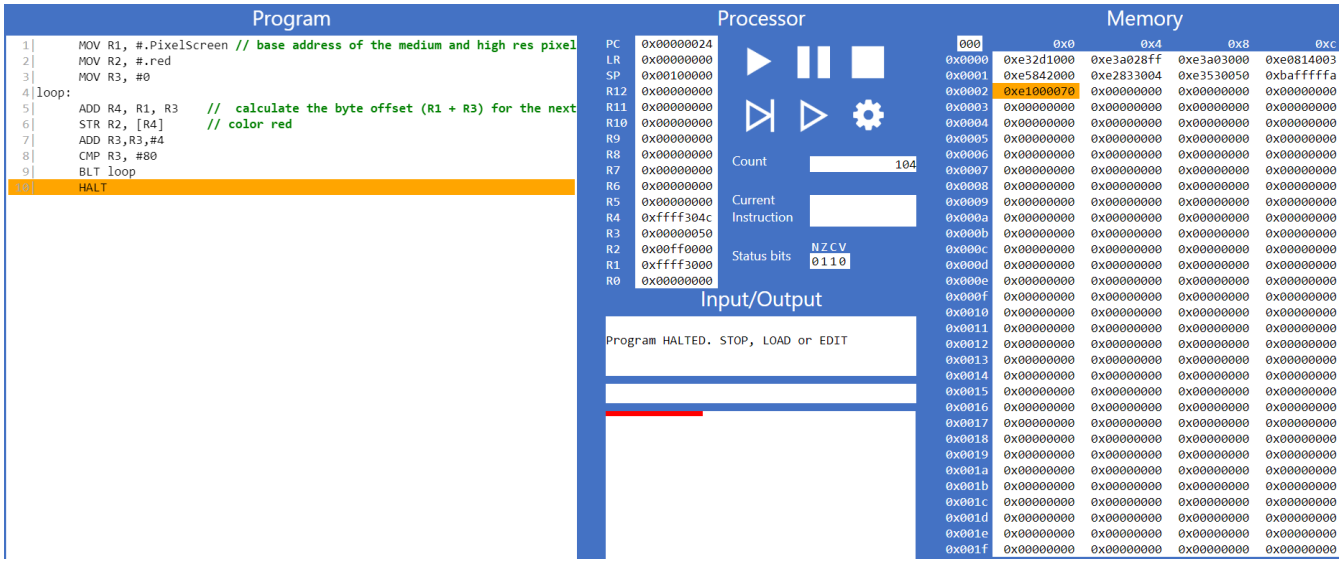
(a) Write a simple ARM lite assembly program that draws a single line of the same length across the second row (starting from the left-most column) in Low-res display mode.



(b) Add to your assembly program code that draws a single line of the same length vertically, down the middle of the display in Low-res display mode



Exercise 9.1.2

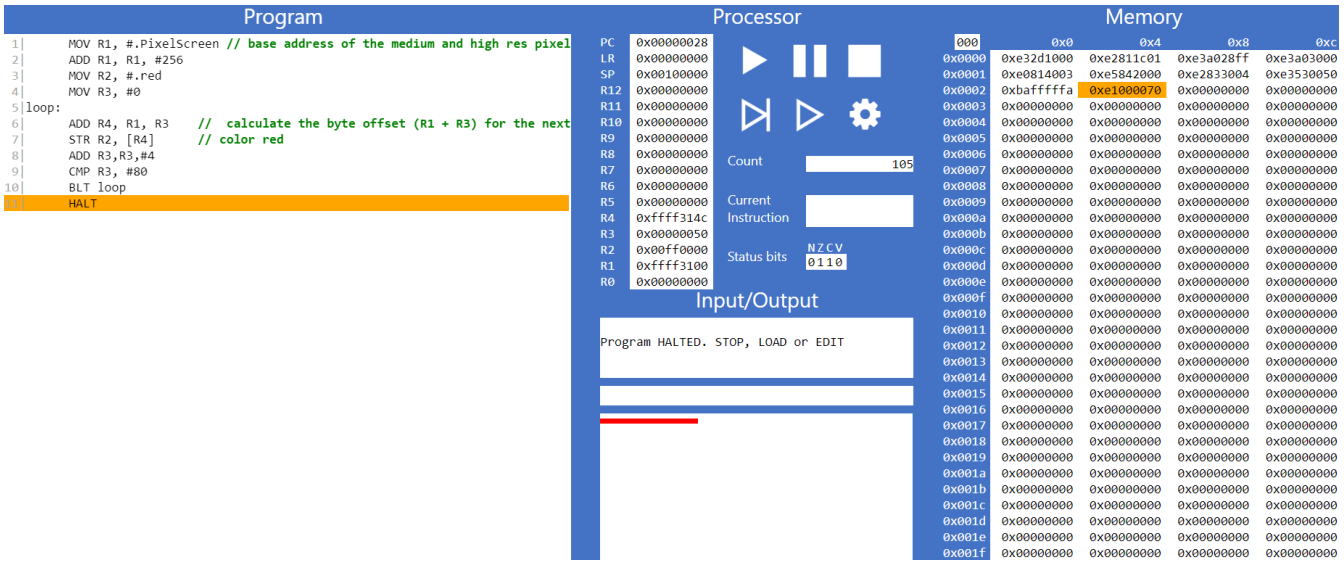


Exercise 9.1.3

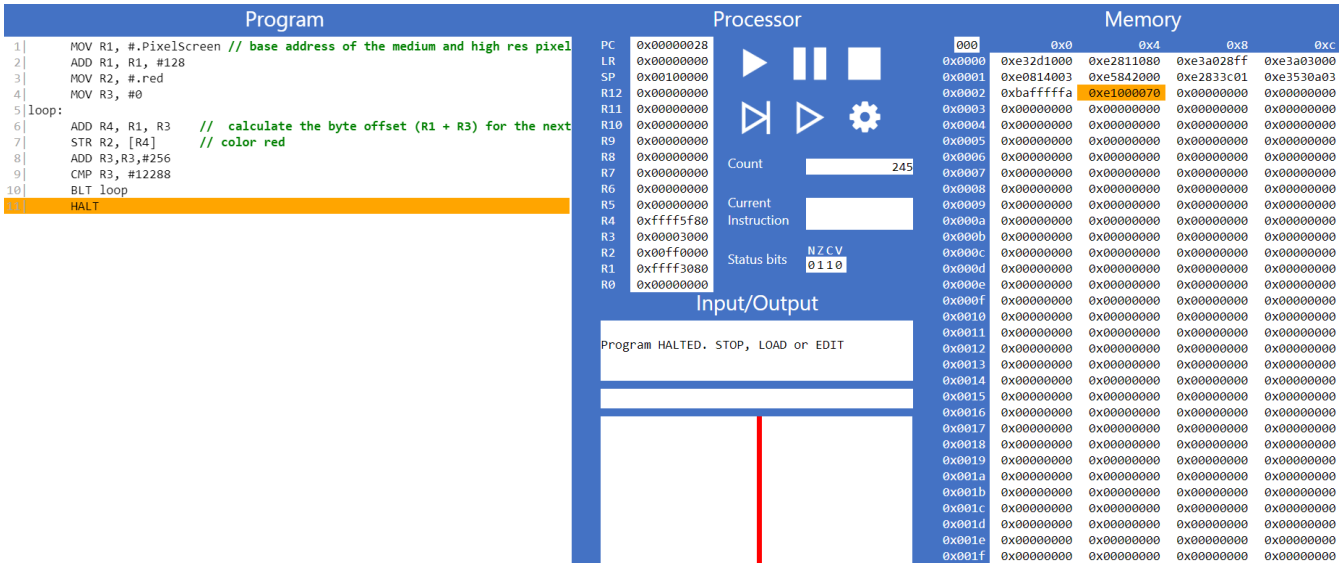
(a) Explain what specifically makes this code an example of indirect addressing ? How is it using indirect addressing to draw each pixel ?

Ans: Because we access and color red the cells via R4 instead of directly implementing it as in exercise 9.1.1, the R4 value increments every loop.

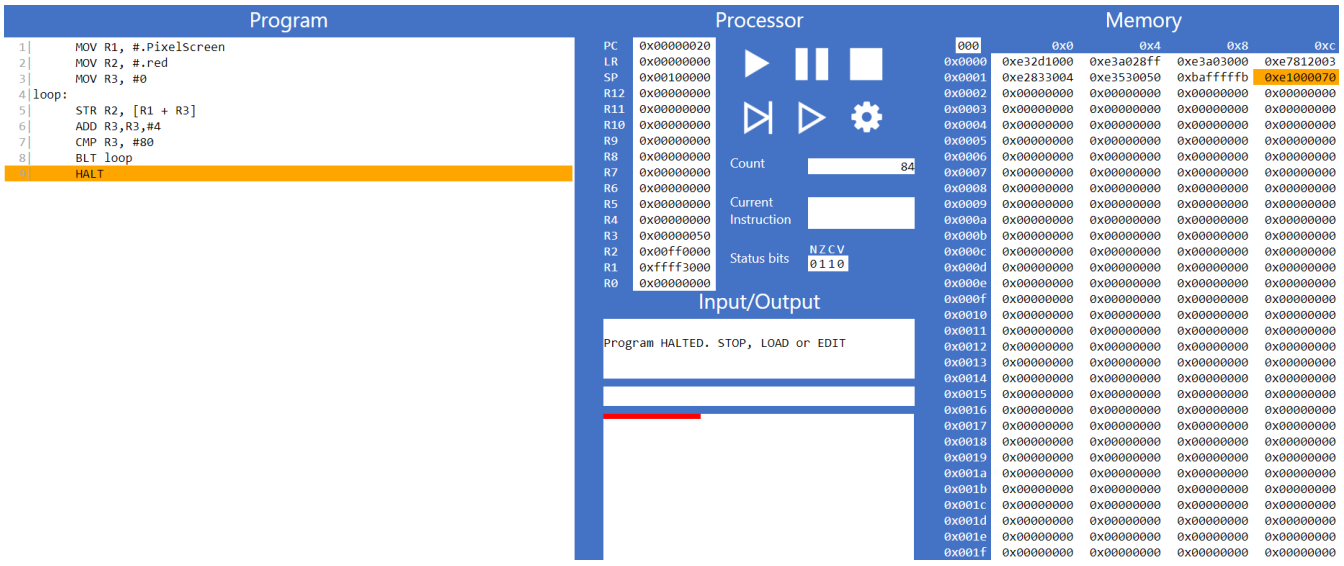
(b) Once you're confident you understand the code, modify the program so that it draws a line of the same length along the second row of the Mid-res display.



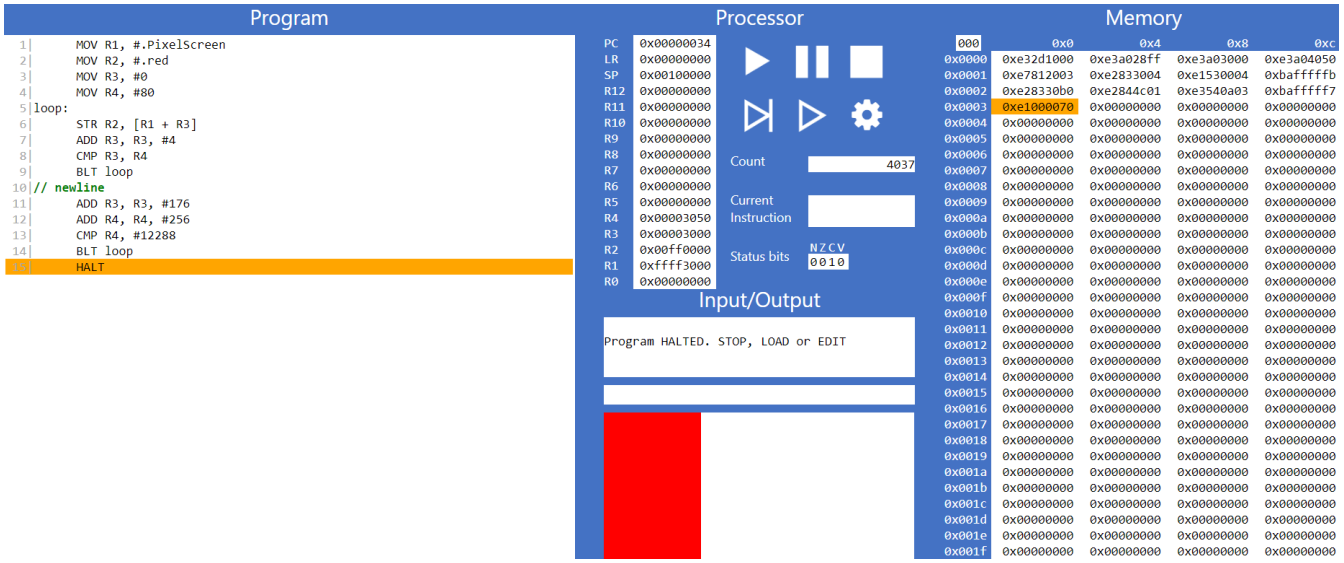
(c) Further modify your program so that it also draws a line of the same length vertically down the middle of the display.



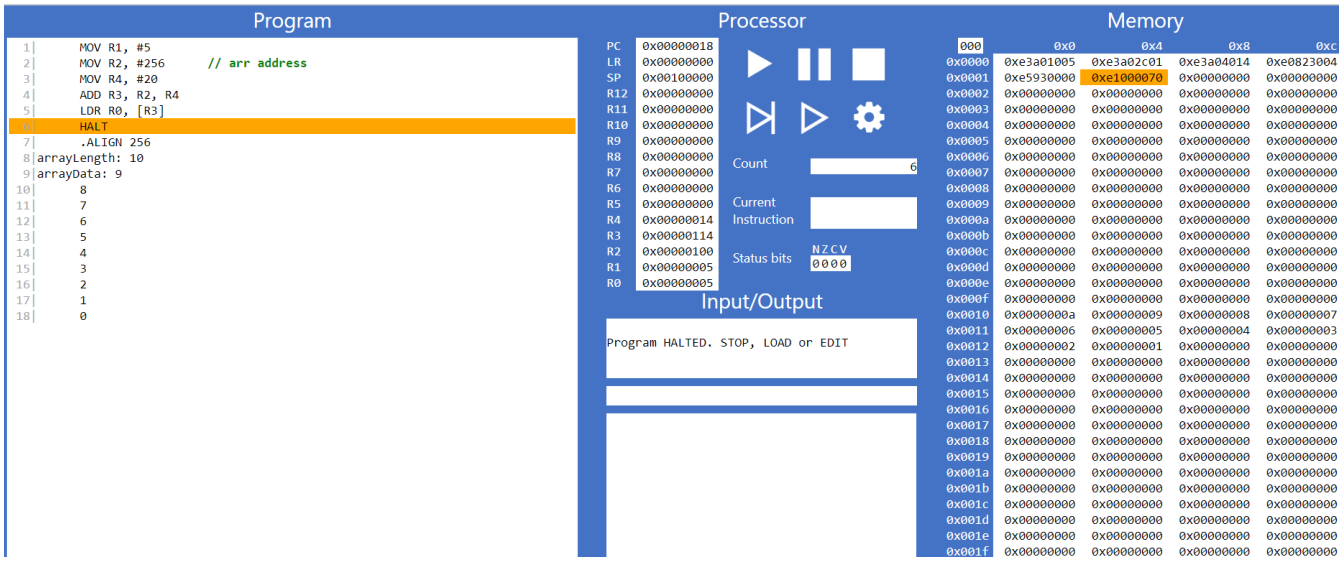
Exercise 9.2.1



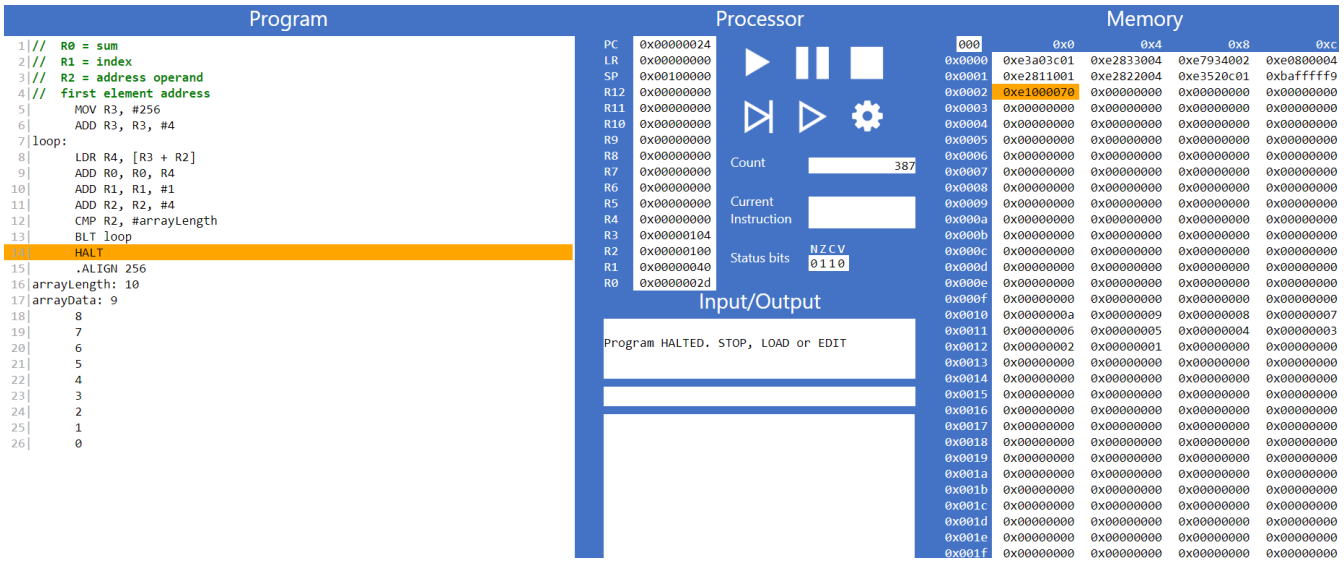
Exercise 9.2.2



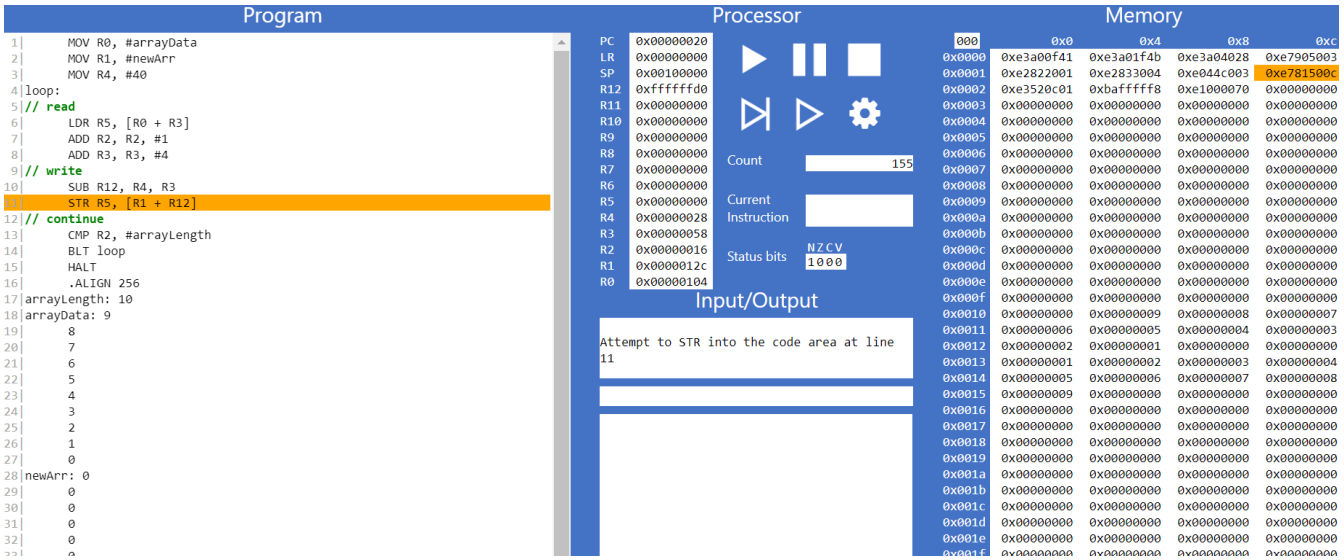
Exercise 9.3.1 : 256 indicate the address of the (first element of the) array



Exercise 9.3.2 & 9.3.3



Exercise 9.4.1



Exercise 9.4.2