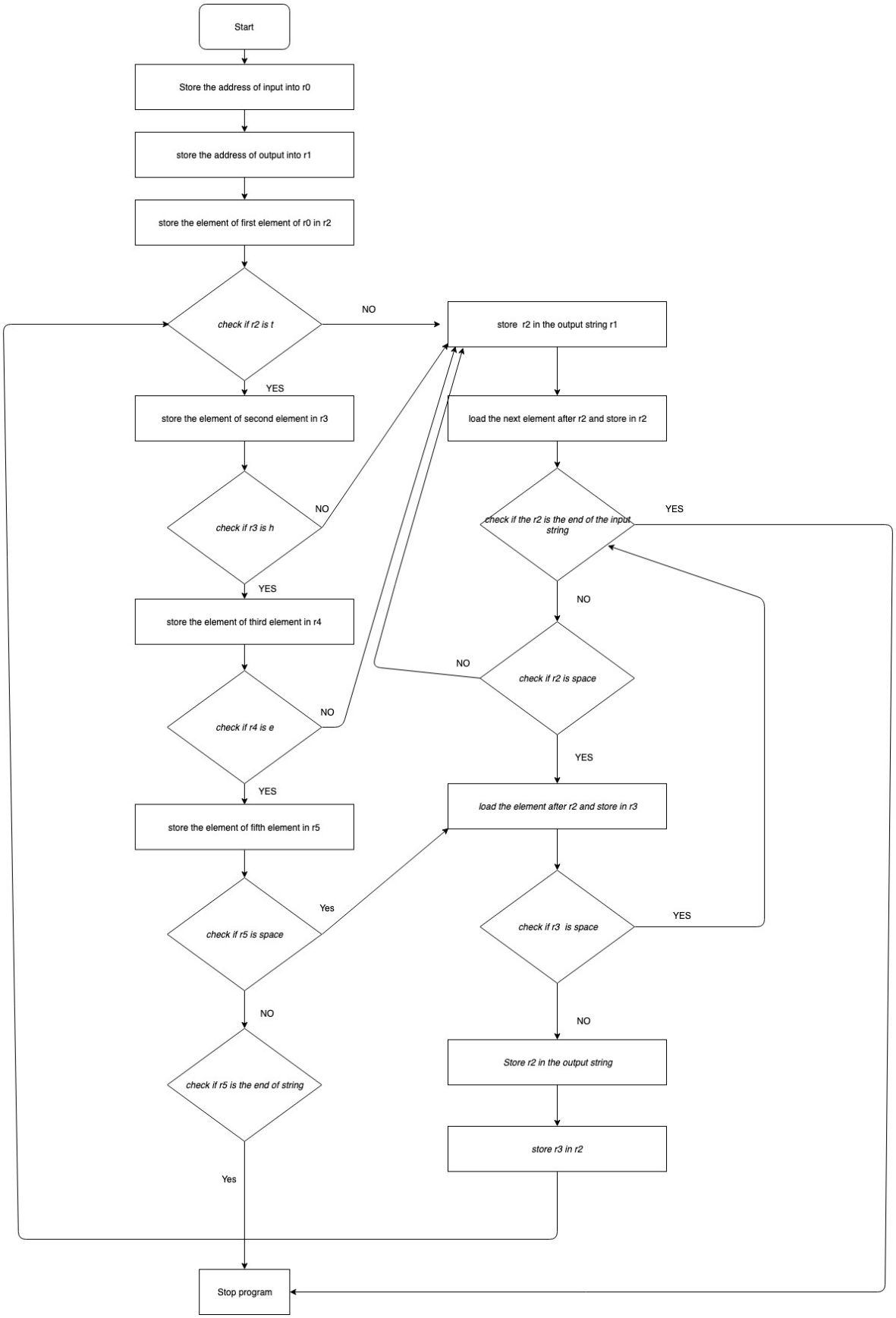
Lishan Huang
Cs2208
Assignment4


Start
Store the address of input into r0
store the address of output into r1
store the element of first element of r0 in r2
check if r2 is t
NO
store r2 in the output string r1
YES
store the element of second element in r3
load the next element after r2 and store in r2
check if r3 is h
NO
check if the r2 is the end of the input string
YES
YES
store the element of third element in r4
NO
NO
check if r2 is space
check if r4 is e
NO
YES
YES
store the element of fifth element in r5
load the element after r2 and store in r3
check if r5 is space
Yes
check if r3 is space
YES
NO
NO
check if r5 is the end of string
Store r2 in the output string
store r3 in r2
Yes
Stop program

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;cs2208 assignment4
            AREA question1, CODE, READWRITE
          ENTRY

final          EQU 0x00;    ;store the end of string
INPUT          EQU STRING1  ;store string1 in INPUT
OUTPUT         EQU STRING2    ;store string2 in OUTPUT
t         EQU 0x74  ;store ASCII number of t in t
h              EQU 0x68  ;store ASCII number of h in h
e         EQU 0x65  ;store ASCII number of e in e
s         EQU 0x20  ;store ASCII number of space in s

          ADR r0,INPUT  ;store the address of INPUT into r0
          ADR r1,OUTPUT ;store the address of OUTPUT into r1
Loop LDRB r2,[r0]  ;store the element of first element in r0
          CMP  r2,#t    ;compare the first element in string
          BNE  STORE     ;if the first element of the word is
not f then the whole word is not the ,then jump to store and
store the element
          LDRB r3,[r0,#1] ;if the first element of the word is f
then read the second element
          CMP r3,#h       ;check whether if it is h
          BNE  STORE       ; if the second element is not h then
jump to store
          LDRB r4,[r0,#2] ;if the second element is h then store
the third element in r4
          CMP  r4,#e      ;check  if the third element is e
          BNE  STORE       ;if it the thrid element is not e
then jump to store
          LDRB r5,[r0,#3] ;if the thrid element is e then check
if it is the end of the word
          CMP r5,#s       ; if the forth element is space then
it is a word 'the'
          LDRBEQ  r2,[r0,#3]! ;if it is space,then store it in
r2
          BEQ    SPACE       ;if it is space,then jump to space
check next element if is also space
          CMP  r5,#final    ;if the end of the word is final,
then it also is the end of string
          BEQ  STOP              ;if it is the end of string,
then jump to stop
STORE       STRB r2,[r1],#1 ;since the word is not the, store
the word in output
          LDRB r2,[r0,#1]!;load the next element
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          CMP  r2,#final  ;check if the next element is  the end
of string
          BEQ STOP       ;if it is the end of stringm, then jump
to stop
          CMP  r2,#s      ;compare the if it is space
          BNE   STORE      ;if it is then keep store it
SPACE          LDRB  r3,[r0,#1];check the next element
          CMP  r3,#s      ;compare the next elment if is space
          BEQ  STORE      ;if it is space the store it
          STRB r2,[r1],#1  ;if the next element is not space,
means next is a new word, then store the space
          LDRB r2,[r0],#1  ; then check the first element of new
word
          B     Loop        ;keep loop
STOP B    STOP       ;finish check

STRING1   DCB   "the the the 123 the" ;String1
EoS            DCB   0x00 ;end of string1
STRING2   space 0xFF ;just allocating 255 bytes
          END
```