```
1:  #Sawyer Fenwick 6005011
2:  #COSC 2P12 Assign_3
3:  #PART B
4:  #This program asks user for input n and input ch, then prints a hollow square matrix
5:  #of size nxn using the characters ch the user inputed. If user enters 0 program ends.
6:
7:  .data
8: msg: .asciiz "Please Enter An Integer Greater Than Or Equal To 3: "
9: msg2:    .asciiz "Please Enter A Character: "
10: msg3:   .asciiz "Enter 0 To Exit."
11: err:    .asciiz "Error: Integer Is Not Greater Than Or Equal To 3. Please Try Again."
12:     .text
13: main:
14:     li $t1, 0   #temporary variable for "square"
15:
16:     la $a0, msg3    #load a0 with contents of msg3
17:     li $v0, 4   #syscall print_str
18:     syscall
19:
20:     li $a0, 10  #load a0 with newline ascii char
21:     li $v0, 11  #syscall print_char
22:     syscall
23:
24:     la $a0, msg #load a0 with contents of msg
25:     li $v0, 4   #syscall print_str
26:     syscall
27:
28:     li $v0, 5   #syscall read_int
29:     syscall
30:
31:     la $t3, ($v0)       #load t3 with v0 for access later
32:     beqz $t3, exit      #if value is 0 exit
33:     blt $t3, 3, error   #if value entered by user is not gtoe to 3 goto "error"
34:
35:     la $a0, msg2    #load a0 with contents of msg2
36:     li $v0, 4   #syscall print_str
37:     syscall
38:
39:     li $v0, 12  #syscall read_char
40:     syscall
41:
42:     la $t4, ($v0)   #load contents of v0 to t4 for hollow square later
43: outer:
44:     li $a0, 10  #load a0 with newline char
45:     li $v0, 11  #syscall print_char
46:     syscall
47:
48:     beq $t1, $t3, main  #when t1 == t3 break
49:     addi $t1, $t1, 1    #incrememt counter
50:
51:     li $t2, 0       #reset t2 to 0
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52: inner:
53:     beq $t2, $t3, outer #when t2 == t3 return to outer loop
54:     addi $t2, $t2, 1    #incrememt counter
55:
56:     beq $t1, 1, print       #if i = 0 print a character
57:     beq $t2, 1, print       #if j = 0 print a character
58:     beq $t1, $t3, print #if i = n print a character
59:     beq $t2, $t3, print #if j = n print a character
60:
61:     #if all above statements fail, print a blank
62:
63:     li $a0, 32  #loads a0 with space character
64:     li $v0, 11  #syscall print_char
65:     syscall
66:
67:     j inner     #repeat
68: error:
69:     la $a0, err #load a0 with contents of err
70:     li $v0, 4   #syscall print_str
71:     syscall
72:
73:     li $a0, 10  #load a0 with newline char
74:     li $v0, 11  #syscall print_char
75:     syscall
76:
77:     j main      #goto main
78: print:
79:     la $a0, ($t4)   #load a0 with char from user input
80:     li $v0, 11  #syscall print_char
81:     syscall
82:
83:     j inner     #return to top of inner loop
84: exit:
85:     li $v0, 10  #syscall exit
86:     syscall
```