Programming Fundamental Milestone 1
2019/20 Trimester 1
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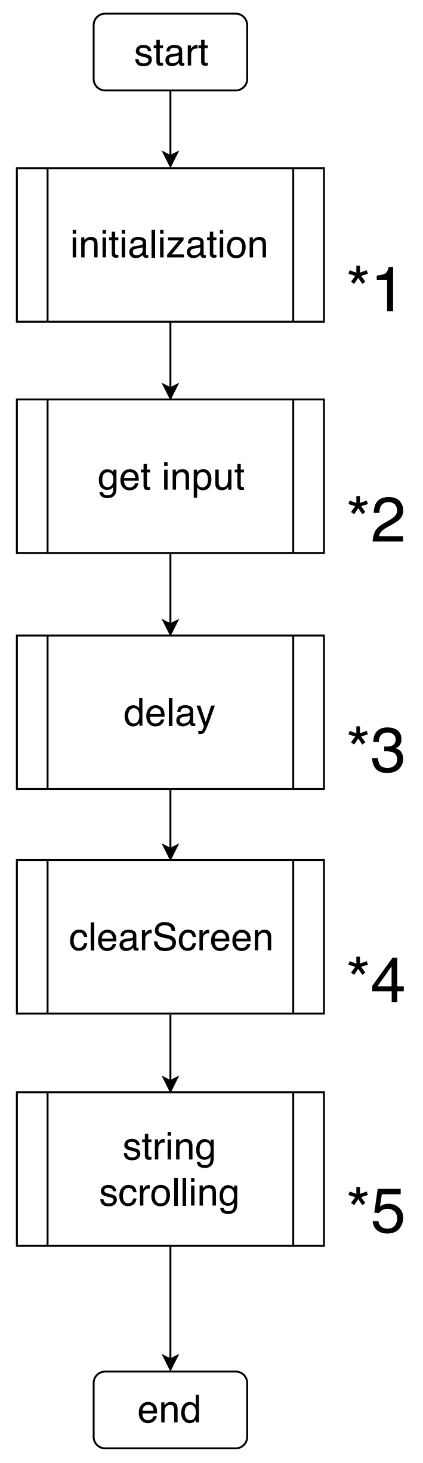
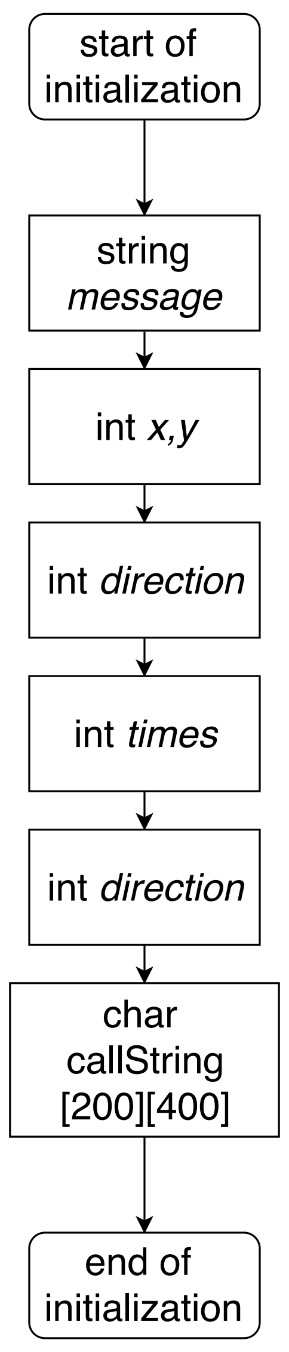
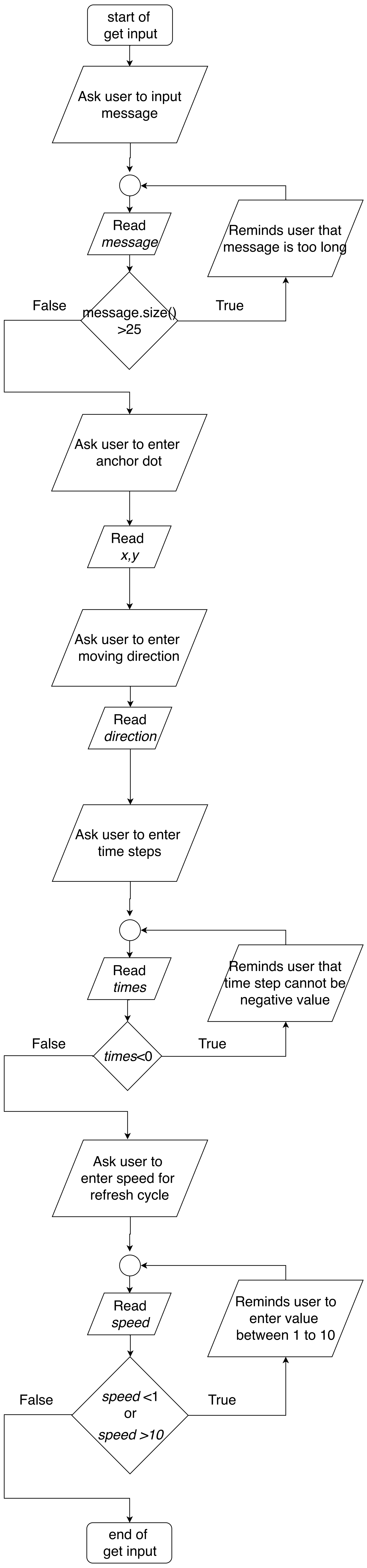
TC01, TT01


start
initialization
*1
get input
*2
delay
*3
clearScreen
*4
string scrolling
*5
end

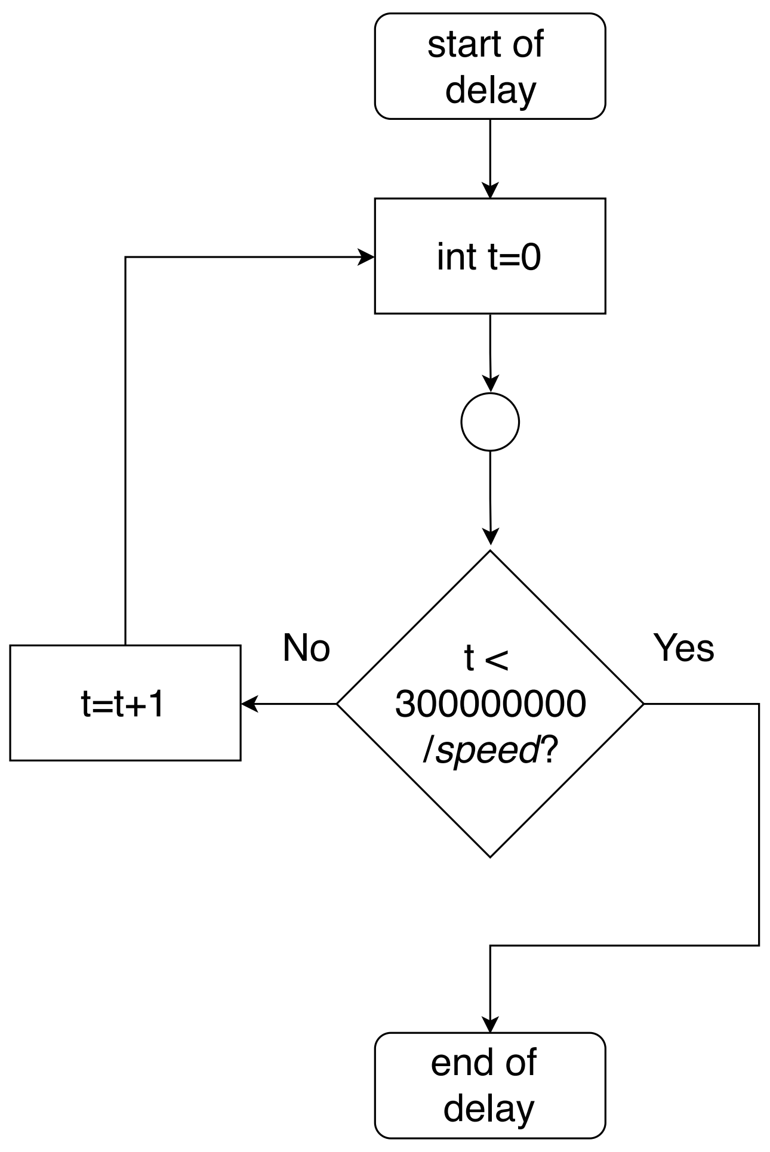
*1


start of initialization
string message
int x,y
int direction
int times
int direction
char callString [200][400]
end of initialization

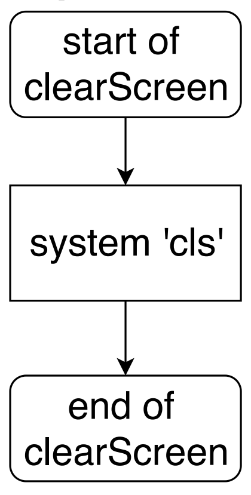
*2

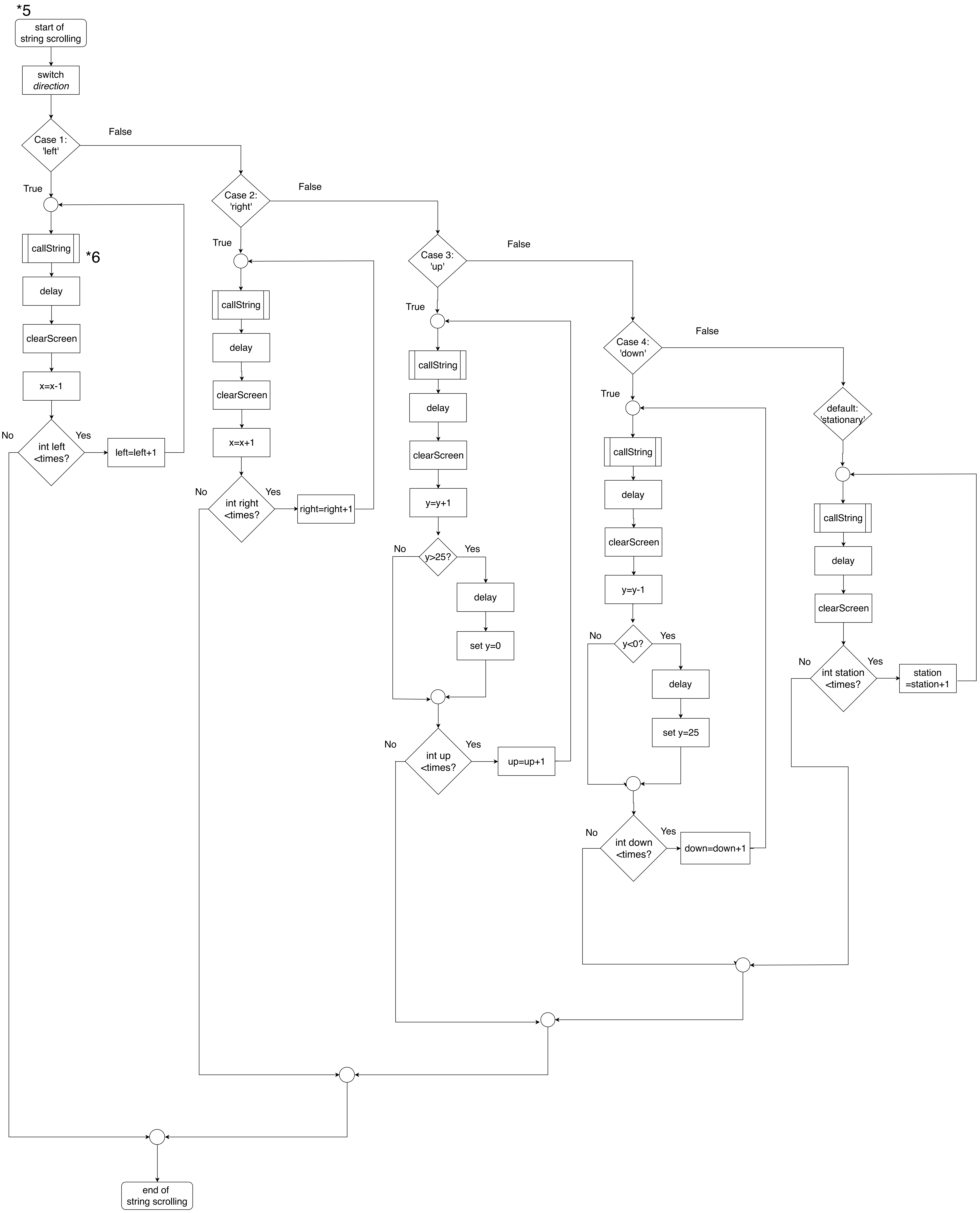

start of get input
Ask user to input message
Read message
message.size() >25
False
True
Reminds user that message is too long
Ask user to enter anchor dot
Read x,y
Ask user to enter moving direction
Read direction
Ask user to enter time steps
Read times
times<0
False
True
Reminds user that time step cannot be negative value
Ask user to enter speed for refresh cycle
Read speed
speed <1 or speed >10
False
True
Reminds user to enter value between 1 to 10
end of get input

*3

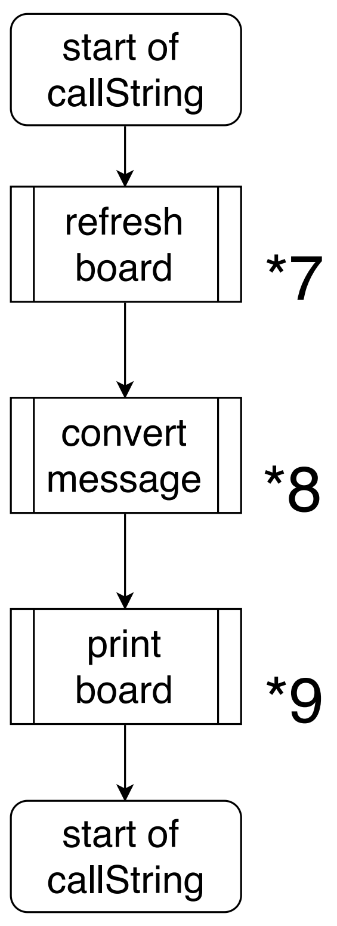

start of delay
int t=0
t < 300000000 /speed?
No
Yes
t=t+1
end of delay

*4

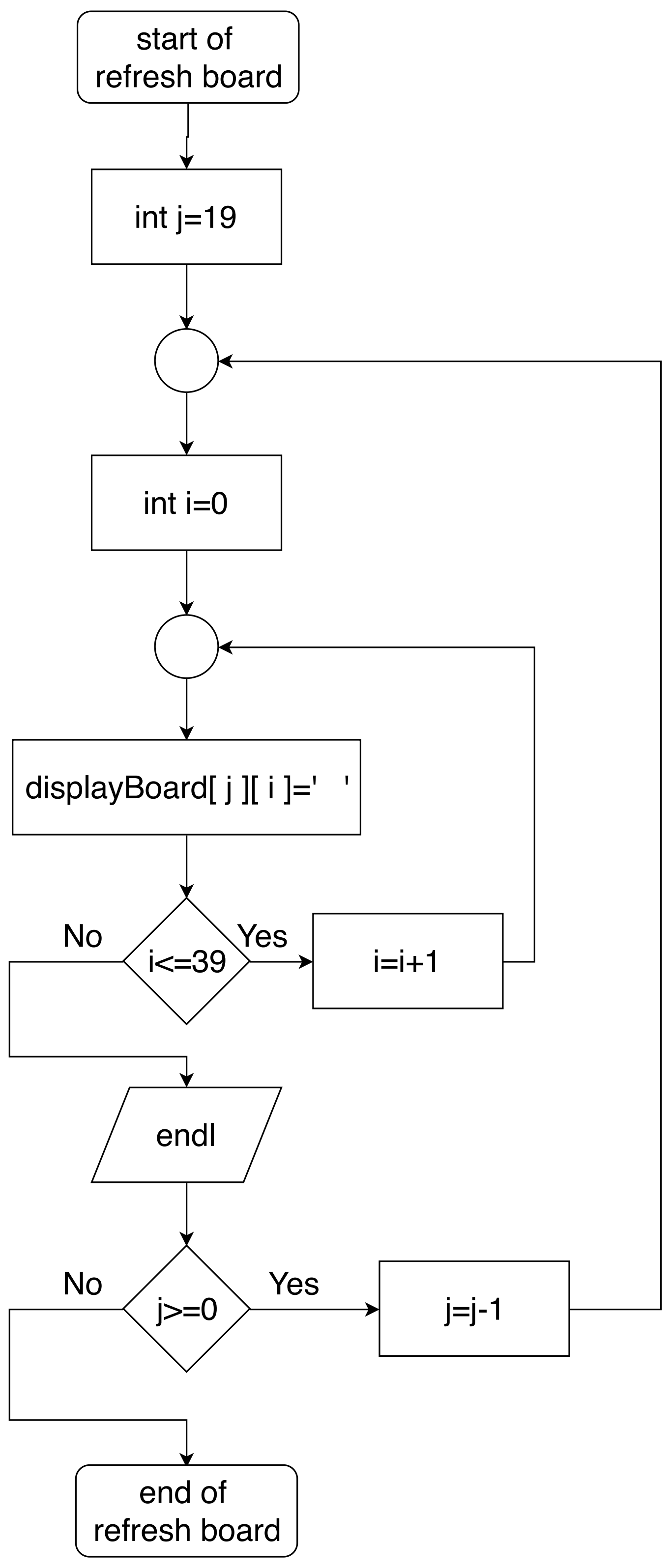

start of clearScreen
system 'cls'
end of clearScreen


*5
start of string scrolling
switch *direction*
Case 1: 'left'
False
True
callString
*6
delay
clearScreen
x=x-1
No
Yes
int left <times?
left=left+1
Case 2: 'right'
False
True
callString
delay
clearScreen
x=x+1
No
Yes
int right <times?
right=right+1
Case 3: 'up'
False
True
callString
delay
clearScreen
y=y+1
No
Yes
y>25?
delay
set y=0
No
Yes
int up <times?
up=up+1
Case 4: 'down'
False
True
callString
delay
clearScreen
y=y-1
No
Yes
y<0?
delay
set y=25
No
Yes
int down <times?
down=down+1
default: 'stationary'
callString
delay
clearScreen
No
Yes
int station <times?
station =station+1
end of string scrolling

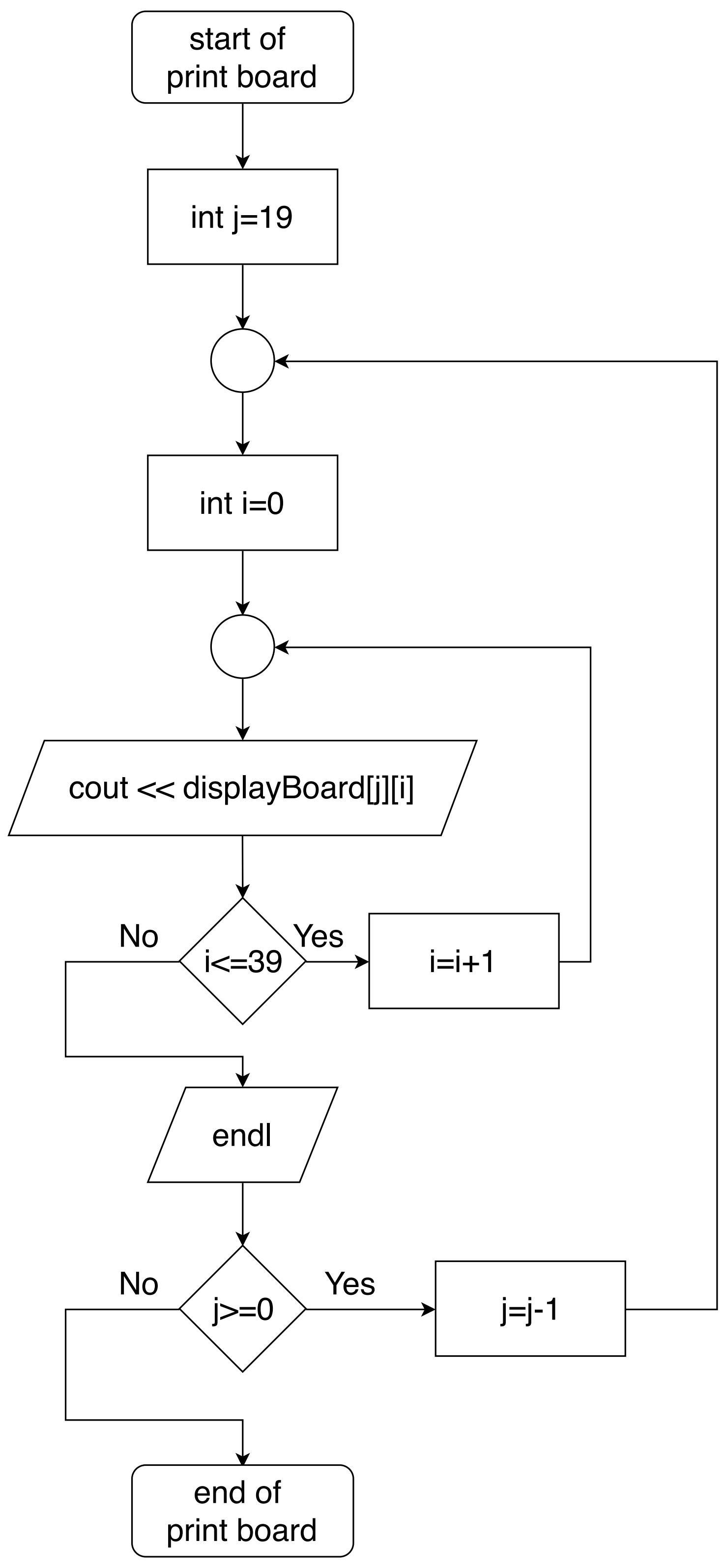
*6


start of
callString
refresh
board
*7
convert
message
*8
print
board
*9
start of
callString

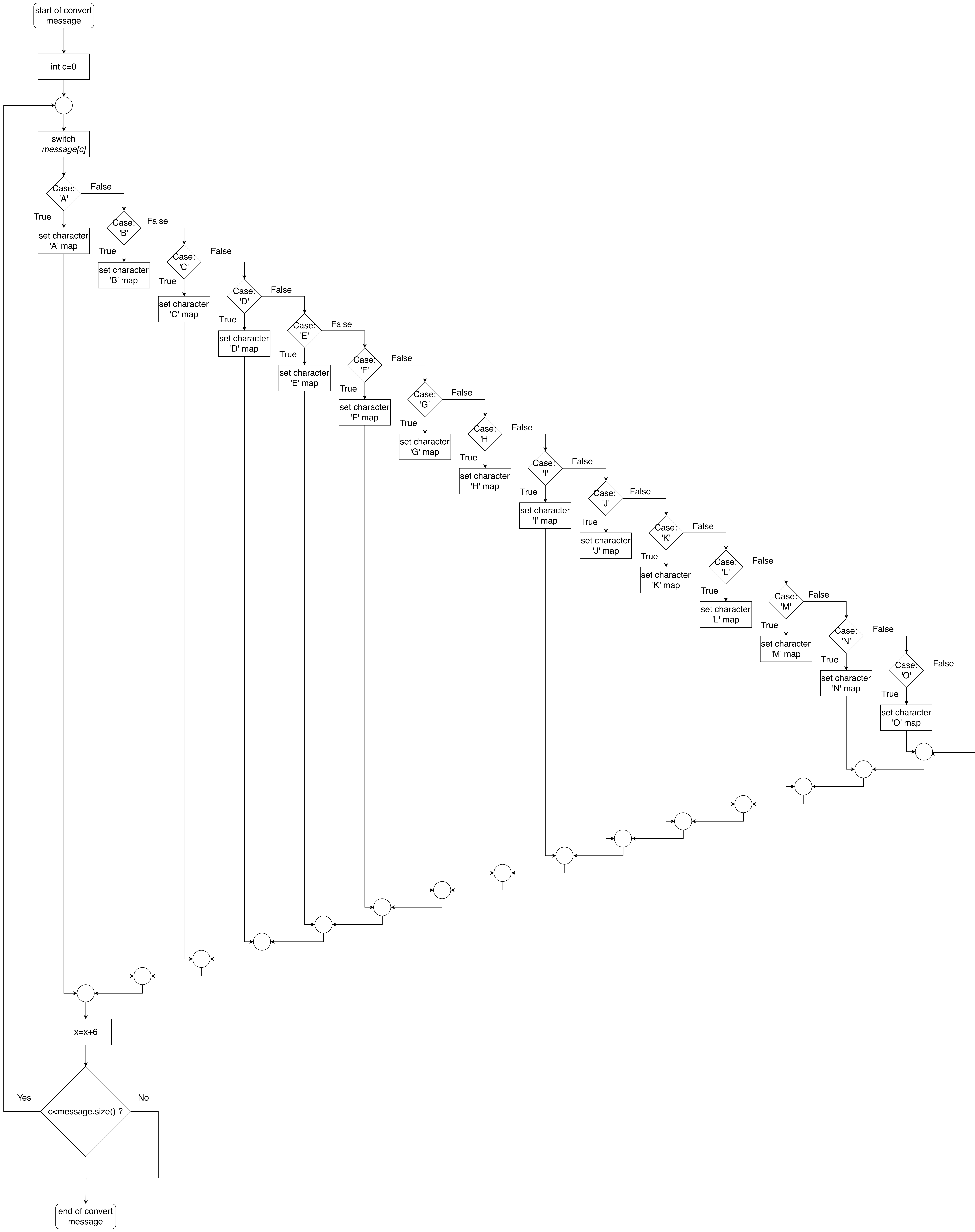
*7

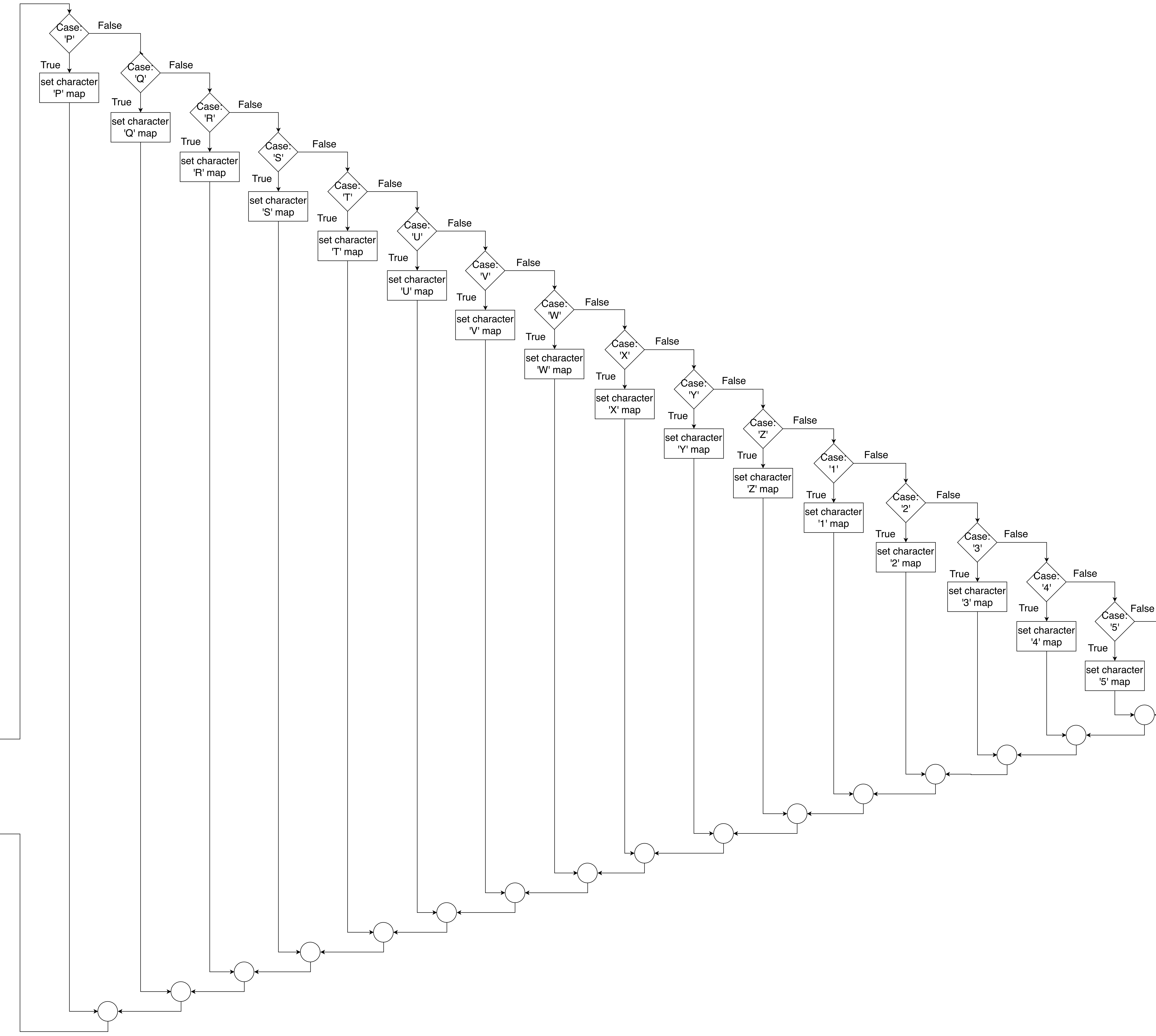

start of
refresh board
int j=19
int i=0
displayBoard[j][i]=' '
No
i<=39
Yes
i=i+1
endl
No
j>=0
Yes
j=j-1
end of
refresh board

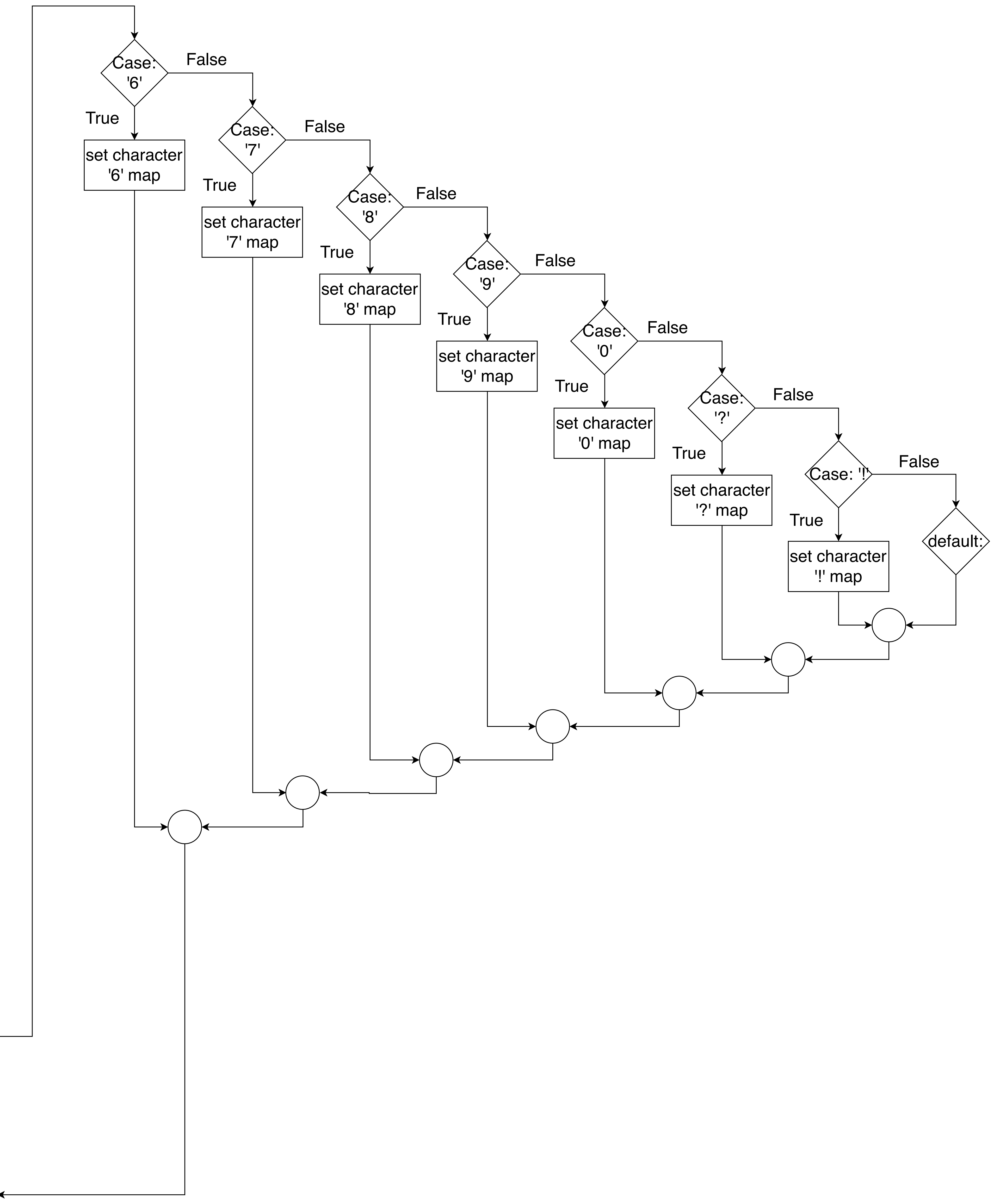
*9


start of
print board
int j=19
int i=0
cout << displayBoard[j][i]
No
i<=39
Yes
i=i+1
endl
No
j>=0
Yes
j=j-1
end of
print board

*8


start of convert message
int c=0
switch *message[c]*
Case: 'A'
False
True
set character 'A' map
Case: 'B'
False
True
set character 'B' map
Case: 'C'
False
True
set character 'C' map
Case: 'D'
False
True
set character 'D' map
Case: 'E'
False
True
set character 'E' map
Case: 'F'
False
True
set character 'F' map
Case: 'G'
False
True
set character 'G' map
Case: 'H'
False
True
set character 'H' map
Case: 'I'
False
True
set character 'I' map
Case: 'J'
False
True
set character 'J' map
Case: 'K'
False
True
set character 'K' map
Case: 'L'
False
True
set character 'L' map
Case: 'M'
False
True
set character 'M' map
Case: 'N'
False
True
set character 'N' map
Case: 'O'
False
True
set character 'O' map
x=x+6
Yes
c<message.size() ?
No
end of convert message


Case: 'P'
False
True
set character 'P' map
Case: 'Q'
False
True
set character 'Q' map
Case: 'R'
False
True
set character 'R' map
Case: 'S'
False
True
set character 'S' map
Case: 'T'
False
True
set character 'T' map
Case: 'U'
False
True
set character 'U' map
Case: 'V'
False
True
set character 'V' map
Case: 'W'
False
True
set character 'W' map
Case: 'X'
False
True
set character 'X' map
Case: 'Y'
False
True
set character 'Y' map
Case: 'Z'
False
True
set character 'Z' map
Case: '1'
False
True
set character '1' map
Case: '2'
False
True
set character '2' map
Case: '3'
False
True
set character '3' map
Case: '4'
False
True
set character '4' map
Case: '5'
False
True
set character '5' map


Case: '6'
False
True
set character '6' map
Case: '7'
False
True
set character '7' map
Case: '8'
False
True
set character '8' map
Case: '9'
False
True
set character '9' map
Case: '0'
False
True
set character '0' map
Case: '?'
False
True
set character '?' map
Case: '!'
False
True
set character '!' map
default: