

# Proof of Correctness Using Induction

count8(int n)



Can use Induction

if len(n) = 1:

if n == 8 return 1

else: return 0

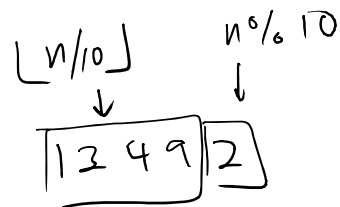
d = n % 10;

if d == 8:

return 1 + count8( $\lfloor n/10 \rfloor$ )

else:

return count8(n/10)



count8'(int n)



Need Strong Induction

if len(n) = 1

if n == 8: return 1

else return 0

else

half =  $\lfloor \text{len}(n)/2 \rfloor$ ;

return count8'(n / 10<sup>half</sup>) + count8'(n % 10<sup>half</sup>)



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