

FCS152 Tutorial 9

Recurrence Relation

1.
 - (i) Find a recurrence relation for the number of bit strings of length n that contain 3 consecutive 0's.
 - (ii) What are the initial conditions?
 - (iii) How many bit strings of length 7 contain 3 consecutive 0's?
2.
 - (i) Find a recurrence relation for the number of bit strings of length n that do not contain 3 consecutive 0's.
 - (ii) What are the initial conditions?
 - (iii) How many bit strings of length 7 do not contain 3 consecutive 0's?
3.
 - (i) Find a recurrence relation for the number of ways to climb n stairs if the person climbing the stairs can take one stair or two stairs at a time.
 - (ii) What are the initial conditions?
 - (iii) How many ways can this person climb a flight of 8 stairs?
4.
 - (i) Find a recurrence relation for the number of to climb n stairs if the person climbing the stairs can take one, two or three stairs at a time.
 - (ii) What are the initial conditions?
 - (iii) How many ways can this person climb a flight of 8 stairs?