

Discussm:

a) Construct Binary Number ✓

b) Boundary in clockwise ✓

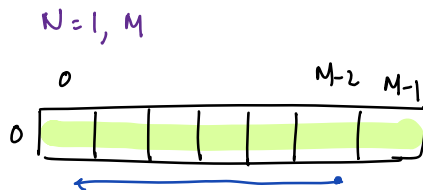
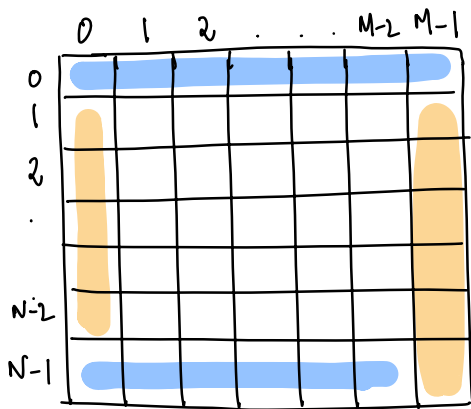
c) Bus Dilema : { Friday 7am :

↳ optional

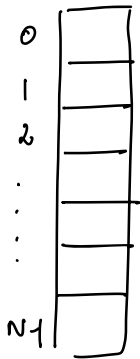
Boundary in Clockwise

1. Print Boundary of Rectangle in Clockwise direction

Ex: $mat[N][M]$



$mat[N][M]$



Idea: arraylist into ans;

$j=0; j < M; j++ \{$

$\quad | \quad ans.push(mat[0][j])$

$\quad \}$

$i=1; i < N; i++ \{$

$\quad * | \quad ans.push(mat[i][M-1])$

$\quad \}$

$\text{If } (N > 1) \{$

$\quad j = M-2; j >= 0; j-- \{$

$\quad \quad | \quad ans.push(mat[N-1][j])$

$\quad \quad \}$

$\quad i = N-2; i >= 1; i-- \{$

$\quad \quad | \quad ans.push(mat[i][0])$

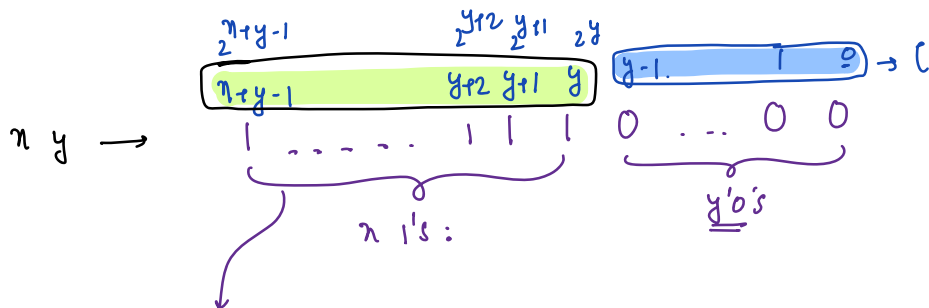
$\quad \quad \}$

2. Construct Number

1. Given n & y : Create Binary number such that, n 's followed y 's

$$n:3 \quad y:2 \rightarrow \begin{array}{c} 2^4 \quad 2^3 \quad 2^2 \quad 2^1 \quad 2^0 \\ \underline{1 \quad 1 \quad 0 \quad 0} \end{array} : 16+8+4 = 28$$

$$n:2 \quad y:4 \rightarrow \begin{array}{c} 2^5 \quad 2^4 \quad 2^3 \quad 2^2 \quad 2^1 \quad 2^0 \\ \underline{1 \quad 1 \quad 0 \quad 0 \quad 0 \quad 0} \end{array} : 2^4 + 2^5 = 16+32 = 48$$



Decimal: $2^y + 2^{y+1} + 2^{y+2} + \dots + 2^{n+y-1}$: G.P formula:

$$a = 2^y, r = 2, n = n$$

$$a \times \left(\frac{r^n - 1}{r - 1} \right)$$

$$2^y \times \left\{ \frac{2^n - 1}{2 - 1} \right\} = 2^y \times (2^n - 1)$$

$$= \underline{\underline{2^y \times 2^n - 2^y}}$$

Final ans = $\underline{\underline{2^{n+y} - 2^y}}$

$$= \underline{\underline{(1 \ll (n+y)) - (1 \ll y)}}$$