

① Decode the Message →

message → encrypt → using key → given

- first make substitution Table
- Then use that Table to substitute
- Space & are transformed to themselves

Class	Attack	e → c
	↓ ↓ ↓ ↓	Q → P
decoded	e p e f	g → h
		o → f

Class → key → the quick brown fox jumps over the lazy dog ignore because space

over → dog
 k + c → unk → key se bnaega
 word ki jagah
 kya alega

message → v b s u v i t
 decoded → t i s e + f a → final ans

(S-1) → Create Mapping

(S-2) → Use Mapping to decode

27928

Date.....28

→ we know we have 256 chairs

I create Mappin g

for-each Loop → ~~data type~~

for (auto ch : key) {

$\text{start} = {}^6\text{a}$?
 if ($\text{ch} \neq {}^6$ & $\&$ $\text{mapping}[\text{ch}] = 0$)
 $\text{char mapping}[256] = 0$;
 $\&$ $\text{mapping}[\text{ch}] = \text{start}$

Start ++

→ string ans

for (auto ch : message) {

If $(d_1 = 6)$ ans (6)

else \rightarrow decodechar = mapping[ch]
ans (decode char)

return and

buy

h e g a u i c k g b y o w n s f o x e j u m p s c o
o b e x d e f g h k t j s k l m x n k o x p r q r s x

start

~~1880-1890~~ 1880-1890

~~char start = 'a'~~

for (auto check)

for (auto ch : key) {
 if (not space & !map(ch)) map(ch) = start;
} // char mapping [3w]

27/9/23

256 → because that many characters available
Date: 29

mapping →

10 0 0 + ————— 10 0 0

⇒ for (auto & i) → index
PJ (ch = 66 → char) → message
push → (6, 1)

else → char decoded char = map [ch]
and push_back (decoded char);

2) → Minimum Amount of Time to Collect

garbage → [66 G 0 | 66 P 1 | 66 D 11 | 66 G G 17]
P → pick → pick → Travel [i]

travel → [2 1 4 1 3] garbage → garb[1]

No Metal T1 T2 T3

Find Min Time Pickup Final Ans.
1 min for each HPLG Final Ans.
+ Pick + Travel

Final Ans = pickup time + travel time

Paper
2 min

Glass
4 min

Metal
6 min = 6 min

✓ ↗ ↘ ↗ ↘ ↗
8 min 19

= 15
→ 21
Spiral

P 100 kaise P + a
↑ Last Take Nhi Jan

27/9/23

(P)

Next
kuchhi

Date 20.....

(S)

finet

C → Garbage → | G | P | PG | G (R) |

(G)

Last P

Travel → | 2 1 4 | 3 |

Khai bhi

(M)

Pick → O (°, No H in garbage)

O O

travel → O → M hai N hi Tobi

kya bhi

P

(P)

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

O O

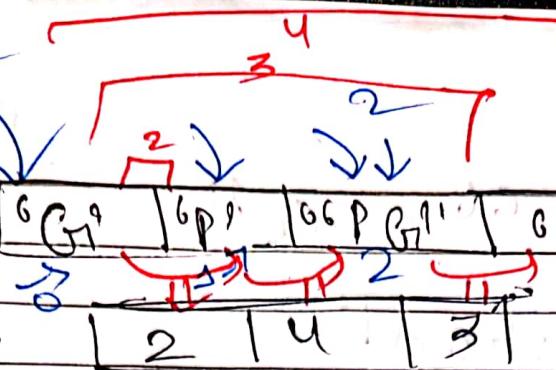
O O

O O

O O

27/9/23

Garbage



Travel →



$G \rightarrow O$

Pick P

13 TravelP

$$2+4=6$$

last P

Pick G

TravelG

$$2+4+3=9$$

last G

Pick M

TravelM

last M

$$8+13=21 \text{ min}$$

⑥ → Custom Sort. String →

given → cbac → aceto this
sort this → abcd

Op → cbacd → sort like this

function gisko Two char do is

tell konai phle lgau

make a custom comparator

Spiral

27/9/23

8t8

Date (32)

Order = Gb cba !!

s = Gb abcd !!

| a | b | c | d |

Compare

| (a, b) |

Check if $a \geq b$

or

$b > a$

An. order

$b > a$

Check in order

if ($a \leq b \text{ else } c \leq b$)

yes

no

Return True Return

False

better function (Sort)

so \Rightarrow [b|a]

Compare (c₁, c₂) ?

return (str.find(c₁) < str.find(c₂))

if find & check ki

c₁ ki posi phelle lih c₂
order vali string

Yes Toh
Same kardo

No Toh
Mat c₂ phelle
kardo

2-9-23

Date (33)

Q) Find And Replace Pattern

Pattern \rightarrow aabb

labc | dee | mee | aag | dkd | ccc
 $\times \quad \times \quad \downarrow \quad m \rightarrow 1 \quad \checkmark \quad a \rightarrow 1$
 $e \rightarrow 2 \quad a \rightarrow 2$

Ans \rightarrow mee, aagQn \rightarrow 2Pattern \rightarrow abbc \rightarrow a¹
 \rightarrow b²
 \rightarrow c¹

Word \rightarrow baa, b, dee, f
 $b \rightarrow 2 \quad \times \quad (b_1 \quad a_2 \quad b_1) \quad d \rightarrow 1 \quad e \rightarrow 1 \quad f \rightarrow 1$

Like Q1 question

Word \rightarrow abc
 map \rightarrow a bc $\xrightarrow{\text{equal}}$ pattern
 \rightarrow abb

Word \rightarrow dear $\xrightarrow{\text{Not equal}}$
 map \rightarrow a b c $\xrightarrow{\text{equal}}$
 word \rightarrow mee
 word \rightarrow abb $\xrightarrow{\text{Not equal}}$
 word \rightarrow dkd
 word \rightarrow aba

Catch \rightarrow

pattern \rightarrow aff \leftarrow ab
 \leftarrow Not equal
 \leftarrow med
 \leftarrow a bb

map \rightarrow aff \leftarrow ab
 \leftarrow Not equal
 \leftarrow med
 \leftarrow a bb

But if
 correct
 in

Spiral

27/9/23

approach → Create Mapping function
 → pass pattern

→ Then pass word

→ After Mapping clock pattern & word
 are equal → point equal

Create Mapping

"for" → create → "abb")

Mapping()

for → abba

for → abbc

abc	not	nee	meel	laavai	door deal
-----	-----	-----	------	--------	-----------

abc → cm() → abc → Pattern
 not → cm() → abc → GPAR
 nee → cm() → abb →
 meel → cm() → abb → Discard
 laavai → cm() → abbb →
 door → cm() → abb →
 deal → cm() → abc →

→ If Pattern ko convert na karta Toh
 par = kiske equal na oto

Spiral

24/9/23

H/W

Date 35

Q) Number of Laser Beams in a Bank

floorbank $\rightarrow m \times n$ 0 \rightarrow empty1 \rightarrow security collCond M \rightarrow

		1	2	3	
r ₁	4	0	1	1	0
Nb < i	3	0	0	0	0
Security r ₂	2	0	1	0	2
device	1	0	0	1	1

Same floor per N of
Laser beam

2 devices are located in diff rows & col $\Rightarrow r_1 < r_2$

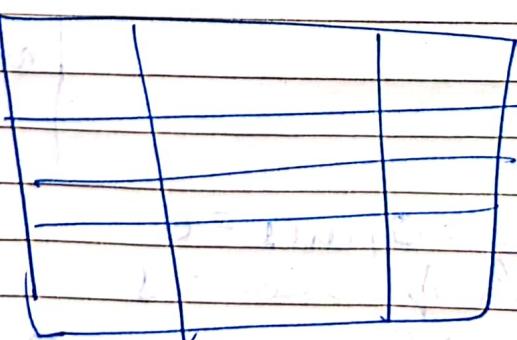
\rightarrow for each row i where $r_2 < i < r_1$
there are no security device

A $\xrightarrow{\text{Laser Beam}}$ B \rightarrow Middle No Interpretation
 $r_1 < r_2$

Find Total No of Laser beams?

 $m \rightarrow$ devices

$$\text{Total} = n \times m = 3 \times 2 = 6$$

 $n \rightarrow$ m \rightarrow devices

$$\begin{aligned}
 3 \times 4 &\rightarrow 3 \times 2 = 6 \\
 0 & \\
 2 & \\
 1 & \rightarrow 2 \times 1 = 2
 \end{aligned}$$

$$\text{Total Beams} = 6 + 2 = 8$$

Spiral

8/10/23

0	0	1	1	0	0	1	③ \rightarrow prev
0	0	0	0	0	0	0	② \rightarrow curr
0	1	0	1	0	0	0	① \rightarrow proc = 0 coc = 0 ans = 0
0	0	1	0	0	0	0	→ loop coc = 3 coc > 0 ans = 0 * 3 = 0 proc = 3 coc = 0

curr * prev

proc \rightarrow previous Count
 coc \rightarrow current one Count

proc = 0, coc = 0, ans = 0

for (auto str : bank)

for (auto ch : str)

if (ch == 'l' || ch == 'j')

coc +

if (coc > 0) {

ans += prev * coc;

proc = coc;

coc = 0;

}

return ans;

① \rightarrow coc = 0
0 > 0 \rightarrow R

② proc = 3,
coc = 0
ans = 0

loop proc = 2

coc > 0
ans = 8 * 2 = 6

proc = 2
coc = 0

(iv) proc = 2, coc = 0, ans = 6
 \rightarrow In Loop \rightarrow coc = 1

coc > 0

ans += 2 * 1 * 6 = 8

return ans \rightarrow 8

Spiral