Week 05

Char-Arrays & Strings Lec 3

Q. 2352. Decode the message.

Key → | t | h | e | ' ' | d | o | g | t |

a b c ' ' d e f x g

↳ ek a aayega.

t → a , h → b , e → c , d → d , o → e , g → f. ⇒ substitution table.

now, if message → | d | o | g | e |

then o/p ⇒ | d | e | f | c |

Given, Key ⇒ the quick brown fox jumps over dog

abc defgh ijk lm nko peqrs ktcj ukv

message ⇒ vbsu vit

o/p: tise tfa ← final answer.

Approach :- * create mapping
* use mapping to decode

1 character = 1 byte

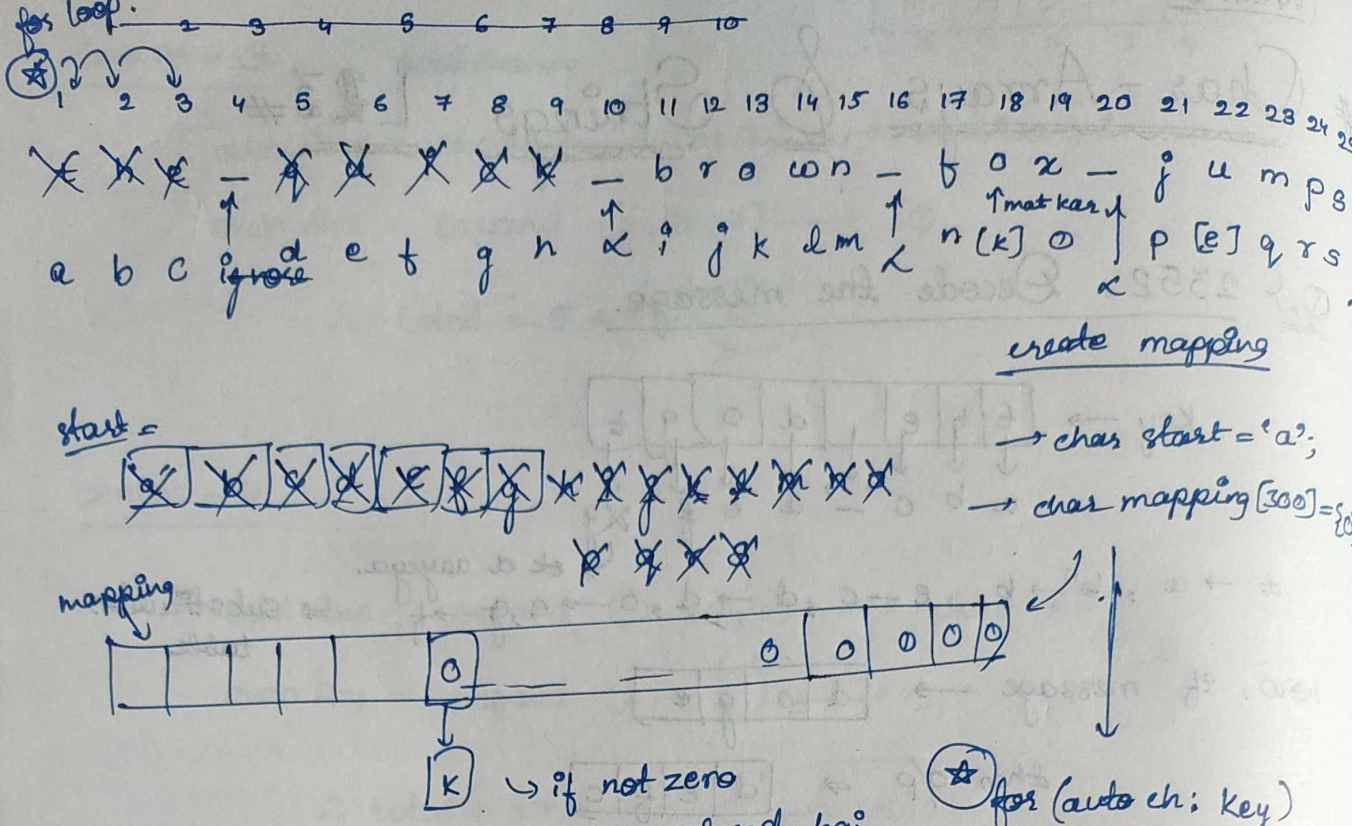
8 bit.

2^8

256

```
vector<int> v;
v.push_back(2);
v.push_back(8);
for (auto num : v)
{
    cout << num << " ";
}
```

o/p :- 2 8


for loop
create mapping
start =
mapping
k
if not zero already hai, to store nahi karoge.
Note :- for (auto ch : key) → string.
ch is not index, it is character
// for each loop :-
string str = "babbar";
for (auto ch : str)
{
cout<<ch<<endl;
}
o/p :- b a b b ar
[∴ It's not index, its character].

2391.

Q) Minimum amount of time to collect garbage.

garbage → | "G" | "P" | "PG" | "GG" |

travel array → | 2 | 4 | 3 |
0 1 2

travel[i]
↳ kitne min lagenge garbage[i] se garb[i+1] tak jaane ke liye.

↳ 1 garbage = 1 min

Trucks: M → T_1, P → T_2, G → T_3

Find min no of minutes to pick all garbage?

method 1

Sol: Time kaha jaa raha hai →
i) pick (1 item = 1 min)
+
ii) travel karne me.

final answer!

∴ finalAns = pickTime + travelTime

P - paper G - glass M - metal

2 × 1m = (2 min) 4 × 1 = (4 min) 0 × 1 = 0

↓

pickTime = 6 min

M ↳ metal hai hi nhi. So truck nahi chalega → 0 min

P → G | P | PG | GG

2 + 4 (X)

↳ 6 min

G → G | P | PG | GG

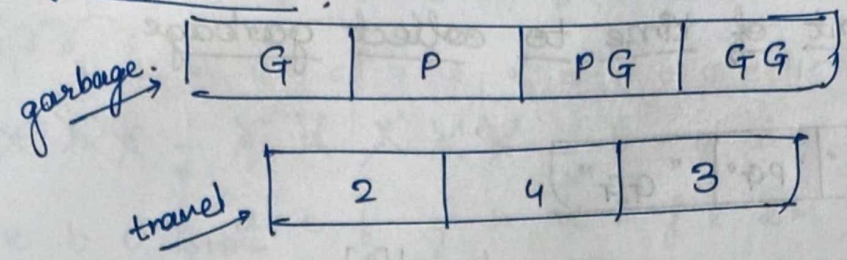
2 4 3

6 + 3 ⇒ 9 min

∴ travel time = 15 min

∴ Totaltime = 21 min

method 2



i) Metal truck → (M) pick = 0
→ (M) travel = 0
} ⇒ 0 min

ii) Glass truck → (G) pick ⇒ 1 + 1 + 1 + 1 ⇒ 4
→ (G) travel ⇒ (2 + 4) + 3 ⇒ 6 + 3 ⇒ 9
} 13 min

iii) Paper truck → (P) pick ⇒ 1 + 1 ⇒ 2
→ (P) travel ⇒ 2 + 4 ⇒ 6
} ⇒ 8 min

∴ final Ans = 0 + 8 + 13 ⇒ 21 min.

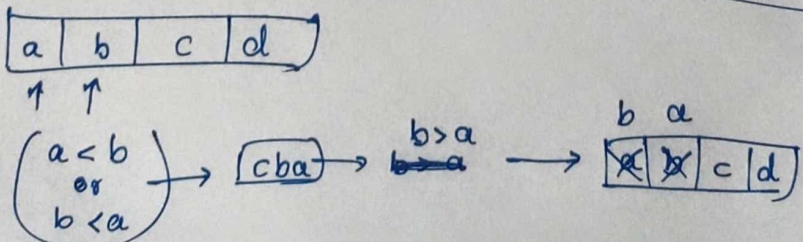
Q. 791 → Custom Sort String

i/p :- order = 'cba' , s = 'abcd'

o/p :- 'cbad'

order = "cba" , string s = "abcd"

→ sort (s.begin(), s.end(), compare)

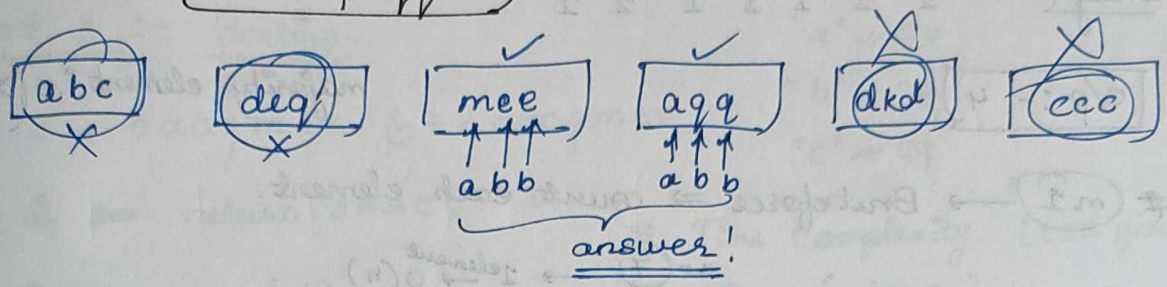


Q. 890 ⇒ Find and Replace Pattern.

i/p :- words → | abc | deq | mee | aqq | dkd | ccc |

↳ pattern → 'abb'

o/p :- ~~pattern~~ → | mee | aqq |



pattern → abbc a1 | b2 | c1 ⇒ matches pqqd.

not matches pqqp ✗

⇒ both count and character.

Solution :- word → a b c

↓ ↓ ↓ mapkaro

a b c is abc == abb ✗.

word → ~~m e e~~ / ~~d e q~~

↓ ↓ ↓

a b b ~~is~~ (abb == abb) True ✓✓.

use mapping and compare with pattern.

* But pattern ka bhi mapping karna hai ⇒ if pattern = pqq then → abb.

Approach :- ~~function~~ (~~pattern~~),

↓

~~update~~