DEPARTMENT OF SOFTWARE ENGINEERING

The University of Lahore

Faculty of Information Technology

Assignment Cover Letter

(Individual Work)

Student Name	Atta Elahi	Program	BS(SE)
SAP ID	70082385	Title of Assignment	04
Course Code	CS 11303	Due Date	15/01/2023
Course Name	Operating Systems	Submission Date	01/01/2023
Section	T		

The assignment should meet the below requirements:

1- Assignment (hard copy) is required to be submitted on clean paper and soft copy as per lecturer's instructions.
2- Soft copy assignment also requires the signed (hardcopy) submission of this form, which automatically validates the softcopy submission.
3- The above information is complete and legible.
4- Compiles pages are firmly attached.
5- Assignment has been copied (softcopy & hardcopy) for each student ahead of the submission.

Plagiarism/Cheating

The university seriously regards all forms of plagiarism, cheating and collision as academic offenses which may result in severe penalties, including loss/drop of marks, course/class discontinuity and other possible penalties executed by the University.

Declaration of Originality

By signing this assignment, I understand, accept and consent to The University of Lahore terms and policies on plagiarism.

I hereby declare that this work represents my own effort, and that all text and code have been written by me and has not been submitted for the use of assessment in another course or class, except where this has been notified and accepted in advance.

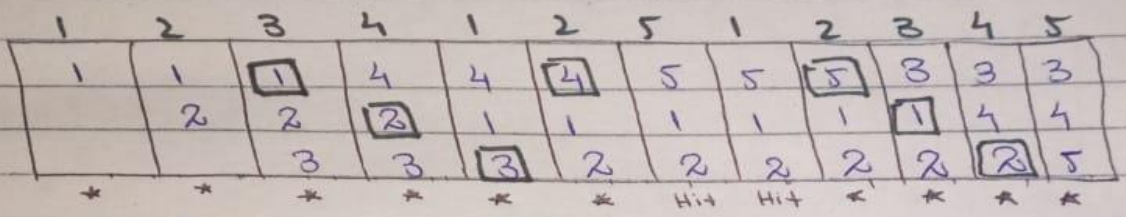
Signature	

Task 1:

LRU page replacement.

1, 2, 3, 4, 1, 2, 5, 1, 2, 3, 4, 5

=> Use 3-frame



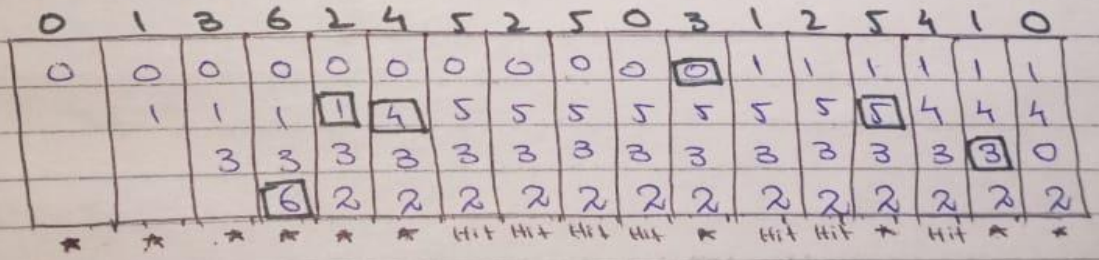
Page Hit: 2
Page fault: 10

Task 2:

Optimal page replacement.

0, 1, 3, 6, 2, 4, 5, 2, 5, 0, 3, 1, 2, 5, 4, 1, 0

=> Use 4-frames



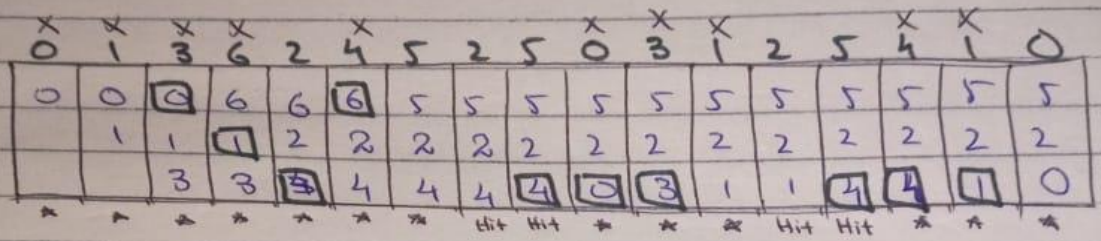
Page Hit: 7
Page fault: 10

Task 3:

NFU page replacement.

0, 1, 3, 6, 2, 4, 5, 2, 5, 0, 3, 1, 2, 5, 4, 1, 0

=> 3-frames.



Frequency:

0 = ∅ , X, ∅, X, ∅, 1

1 = 0 , X, ∅, X, 0

2 = 0 X, X, 3

3 = 0 X, ∅, X, 0

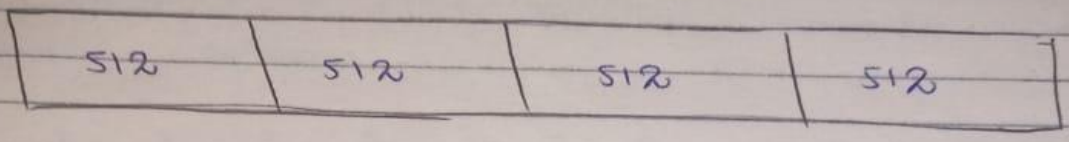
4 = 0 X, ∅, X, 0

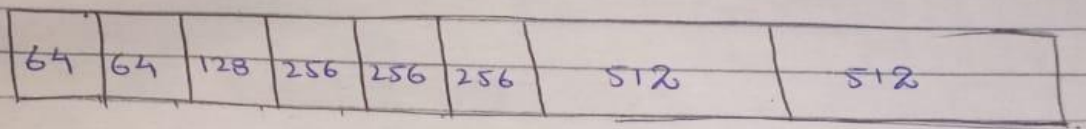
5 = 0 X, X, 3

6 = 0 X, 0

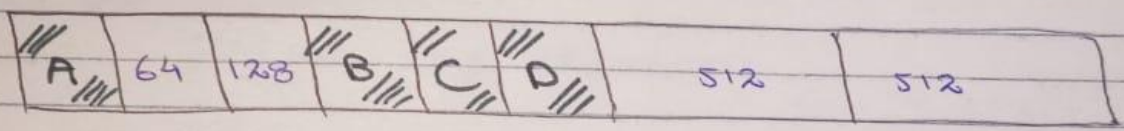
Task 4: **Buddy System.**

2MB ⇒ 2048

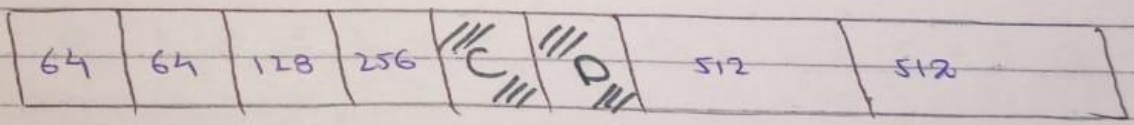




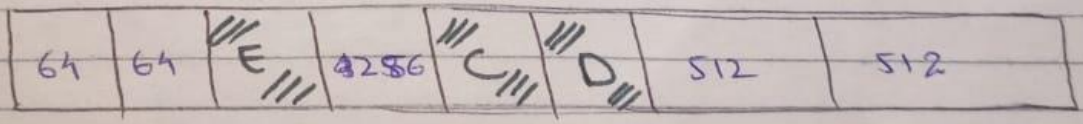
⇒ Request A = 60kB
⇒ Request B = 240kB
⇒ Request C = 150kB
⇒ Request D = 256kB



⇒ Now Released B, A..

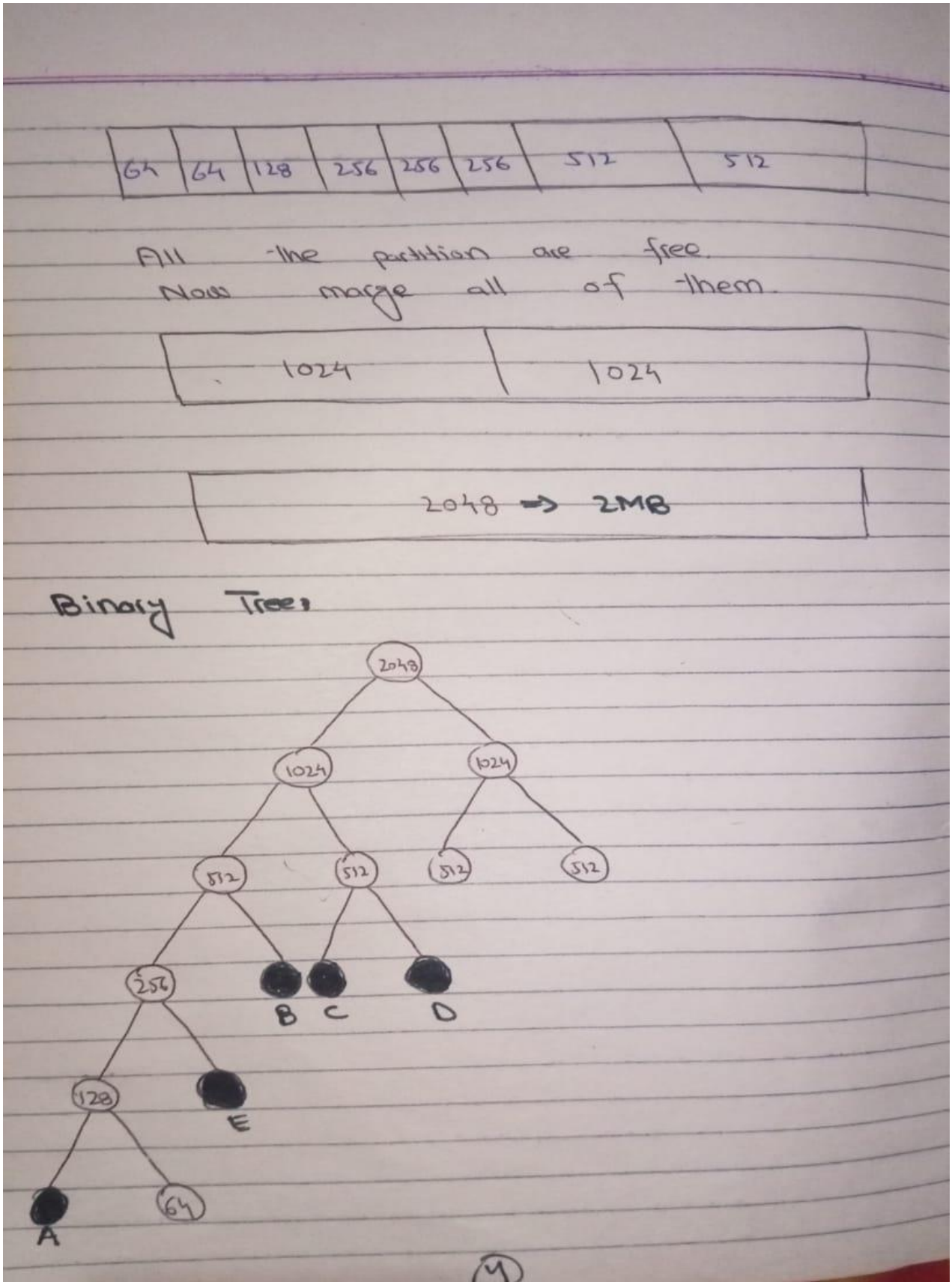


⇒ Now Request E = 75kB



Now Released:
⇒ C
⇒ E
⇒ D

(B)


64
64
128
256
256
256
512
512
All the partition are free.
Now merge all of them.
1024
1024
2048 → 2MB
Binary Tree:
2048
1024
1024
512
512
512
512
256
128
64
A
B
C
D
E