CS202
HOMEWORK 4 REPORT

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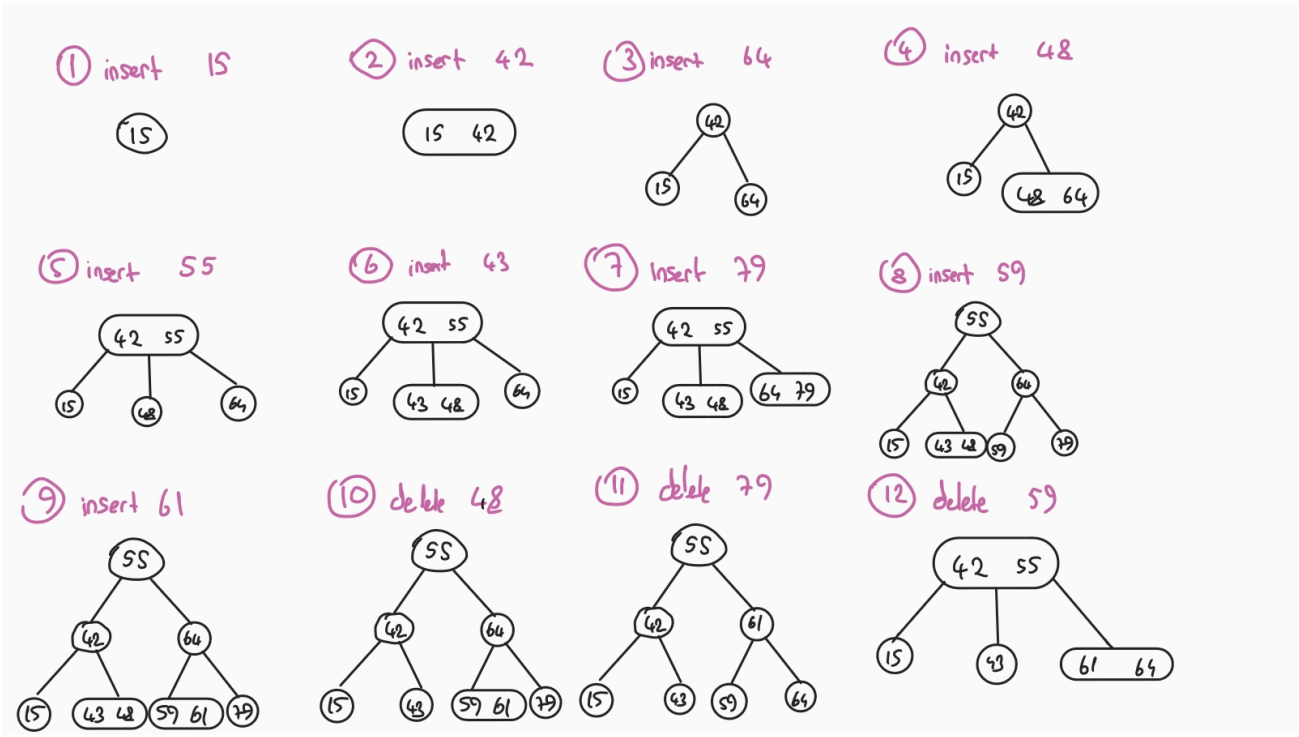
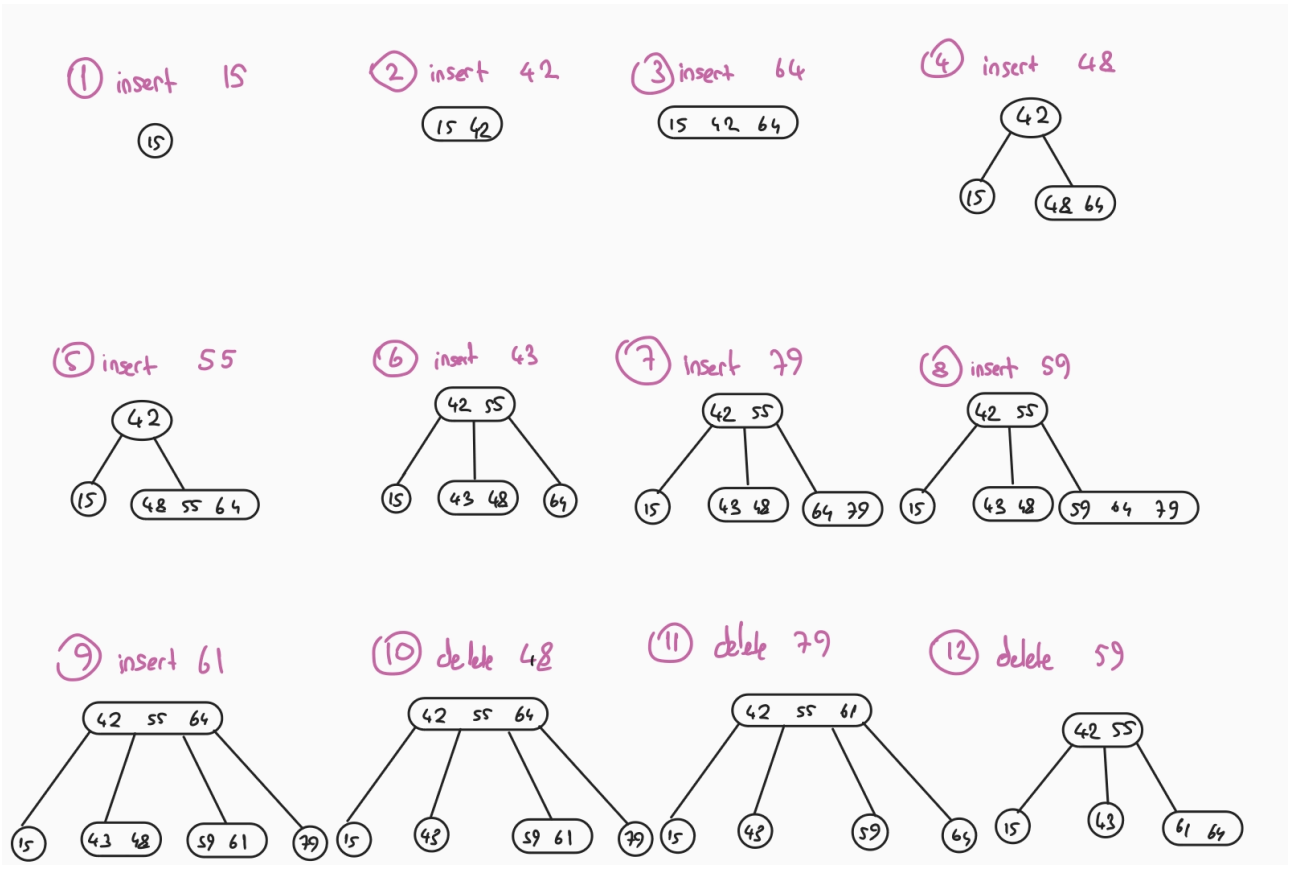
SECTION 3

Question 1

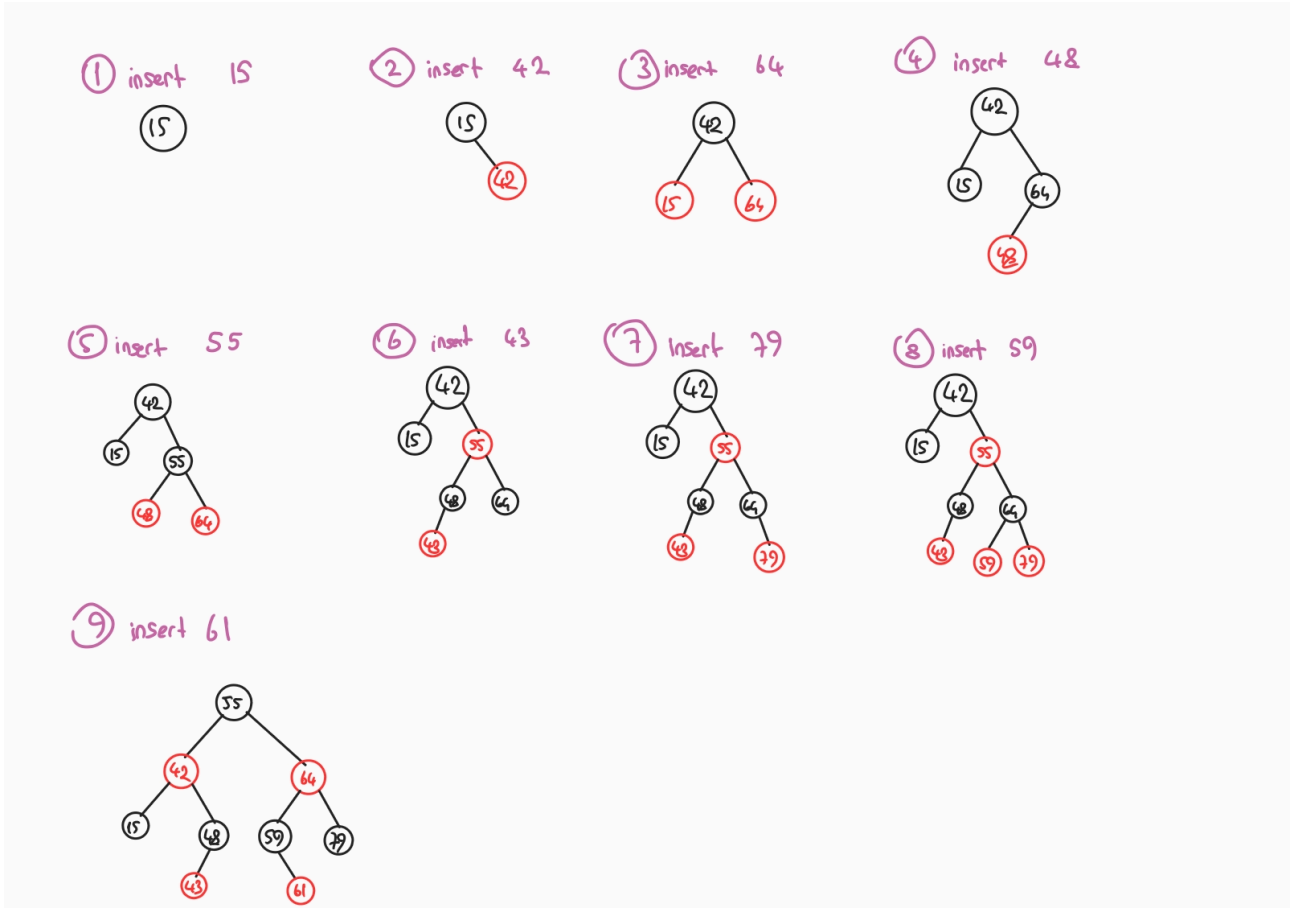
A) 2-3 Tree



B) 2-3-4 Tree



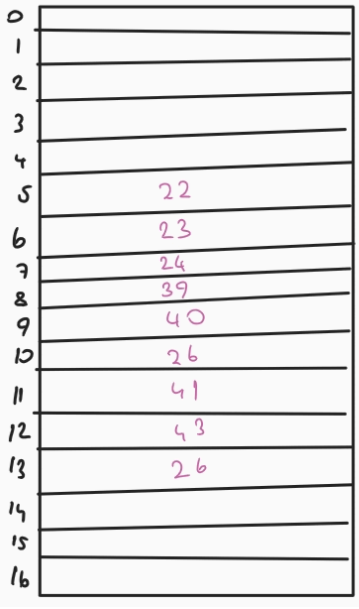
C) Red-Black Tree



Question 2

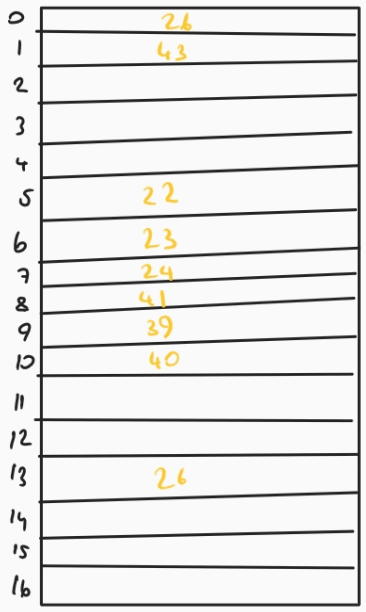
A) Linear

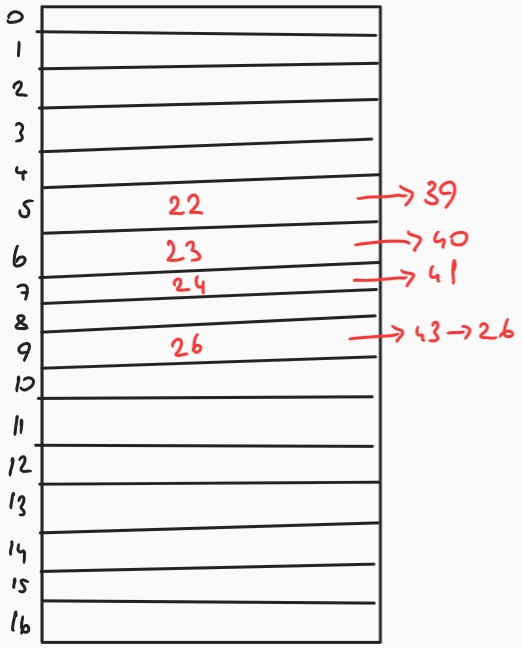
1. 22 →mod 17 → 5
2. 23 →mod 17 → 6
3. 24 →mod 17 → 7
4. 39 →mod 17 → 5+1 → 6+1 → 7+1 → 8
5. 40 →mod 17 → 6+1 → 7+1 → 8+1 → 9
6. 26 →mod 17 → 9+1 → 10
7. 41 →mod 17 → 7+1 → 8+1 → 9+1 → 10+1 → 11
8. 43 →mod 17 → 9+1 → 10+1 → 11+1 → 12
9. 26 →mod 17 → 9+1 → 10+1 → 11+1 → 12+1 → 13



B) Quadratic Probing

1. 22 →mod 17 → 5
2. 23 →mod 17 → 6
3. 24 →mod 17 → 7
4. 39 →mod 17 → 5 + 1^2 → 5 + 2^2 = 9
5. 40 →mod 17 → 6 + 1^2 → 6 + 2^2 = 10
6. 26 →mod 17 → 9 + 1^2 → 9 + 2^2 = 13
7. 41 →mod 17 → 7 + 1^2 = 8
8. 43 →mod 17 → 9 + 1^2 → 9 + 2^2 → 9 + 3^2 mod(17) = 1
9. 26 →mod 17 → 9 + 1^2 → 9 + 2^2 → 9 + 3^2 → 9 + 4^2 → 9 + 5^2 mod(17) = 0



C) Separate Chaining

1. 22 →mod 17 → 5
2. 23 →mod 17 → 6
3. 24 →mod 17 → 7
4. 39 →mod 17 → 5
5. 40 →mod 17 → 6
6. 26 →mod 17 → 9
7. 41 →mod 17 → 7
8. 43 →mod 17 → 9
9. 26 →mod 17 → 9