**Gebreegziabher Redda**

#1

Text

Description automatically generated

**Cost Time**

**C1 1**

**C2 1**

**C3 n+1**

**C4 n**

**C5 1**

**Total =1+1+n+1+n+1**

**But as n growths larger the constant will negligent so their order will be O(n)**

**So that the time required for this algorithm is proportional to n**

#2

Text

Description automatically generated

**Cost Time**

**C1 1**

**C2 1**

**C3 n/2+1**

**C4 n/2**

**C5 1**

**Total =1+1+n/2+1+n/2+1+1**

**But as n growths larger the constant will negligent so their order will be O(n)**

**So that the time required for this algorithm is proportional to n**

#3

Text

Description automatically generated

**Cost** Time

C1 1

C2 1

C3 n

C4 (n^2)/2 +n/2

C5 (n^2)/2 +n/2

C6 1

Total =1+1+n+((n^2)/2 +n/2) + ((n^2)/2 +n/2) +1

**But as n growths larger the constant will negligent so their order will be O(n^2)**

**So that the time required for this algorithm is proportional to n^2**

**#4**

Text

Description automatically generated

Graphical user interface, application, Teams

Description automatically generated

**Cost Time**

**C1 1**

**C2 1**

**C3 1**

**C4 n+1**

**C5 n**

**C6 n**

**C7. 1**

Total =1+1+1+n+1+n+n+n+1

**But as n growths larger the constant will negligent so their order will be O(n)**

**So that the time required for this algorithm is proportional to n**

**#5**

Text, letter

Description automatically generated

**Cost** Time

C1 1

C2 1

C3. n+1

C4 n

C5 n+1

C6 n^2

C7 n^3/2+n^2/2

C8 n^3/2+n^2/2

C9 n

C10 n

C11 1

Total =1+1+n+1 +n+1+n^2+n^3/2+n^2/2+ n+ n^3/2+n^2/2+n+1

**But as n growths larger the constant will negligent so their order will be O(n^3)**

**So that the time required for this algorithm is proportional to n^3**

**#6**

**Text

Description automatically generated**

Text

Description automatically generated

#7 . We have two case the best case and worst-case analysis to measure time taken to computes the algorithms. The best case is the minimum time taken that an algorithm requires to solve problems, but this case will not consider since it is minimum time it may not affect for our systems efficiency, but our main focus is worst case analysis because this means the maximum time taken that an algorithm require to solve problems because it will help us to manage our systems efficiency. If we know the worst case, we can be able to handle how fast the algorithm will perform this leads us to manage our algorithm efficiency.