Algorithms
CSE 2415

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Introduction

Algorithm is a sequence of steps / step-by-step procedure to solve a problem.

Properties of Algorithm:

- Specific input
- Specific output
- Definiteness
- Finiteness
- Effectiveness

Time and Space Complexity

Example:

```
Algorithm:                      space complexity           Space complexity
                                cost     repeat    total   cost repeat total
int i, j;                        1         1         1     i= 4   1     4
for(i = 0; i < n; i++){         1+1+1   1+(n+1)+n   2n+2   j= 4   1     4
    for(j = 0; j < n; j++)      1+1+1  (1+(n+1)+n)+n 2n^2+2n n= 4  1     4
        printf(" \%d ", i+j);     1        n^2        n^2
}
```