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Insertion Sort:

```
#include <stdio.h>
void main () {
    int i, j, k, temp;
    int a [9] = { 12, 30, 4, 9, 10, 12, 7, 9, 0 };
    printf ("\n printing Sorted elements \n");
    for (k = 1; k < 9; k++)
    {
        temp = a [k];
        j = k - 1;
        while (j >= 0 && temp <= a [j]) {
            a [j + 1] = a [j];
            j = j - 1;
        }
        a [j + 1] = temp;
    }
    for (i = 0; i < 9; i++) {
        printf ("\n %d \n", a [i]);
    }
}
```

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Selection Sort:

```
#include <stdio.h>
int Smallest (int [], int, int);
```

```
void main () {
    int a [9] = { 12, 30, 14, 9, 10, 12, 7, 9, 0 };
    int i, j, k, pos, temp;
    for (i=0; i<9; i++) {
        pos = Smallest (a, 9, i);
        temp = a [i];
        a [i] = a [pos];
        a [pos] = temp;
    }
```

```
printf ("\n printing sorted elements \n");
for (i=0; i<9; i++) {
    printf ("%d\n", a [i]);
}
int Smallest (int a [], int n, int i) {
    int small, pos, j;
    small = a [i];
    pos = i;
    for (j=i+1; j<n; j++) {
        if (a [j] < small) {
            small = a [j];
            pos = j;
        }
    }
    return pos;
}
```

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Bubble Sort:

```
#include <stdio.h>
```

```
void main() {
```

```
int i, j, temp;
```

```
int a[9] = {12, 30, 14, 9, 10, 12, 7, 9, 0};
```

```
for (i = 0; i < 10; i++) {
```

```
for (j = i + 1; j < 9; j++)
```

```
for (j = i + 1; j < 9; j++) {
```

```
if (a[j] > a[i]) {
```

```
temp = a[i];
```

```
a[i] = a[j];
```

```
a[j] = temp; } }
```

```
printf("printing sorted element list \n")
```

```
for (i = 0; i < 9; i++) {
```

```
printf("%d\n", a[i]); }
```

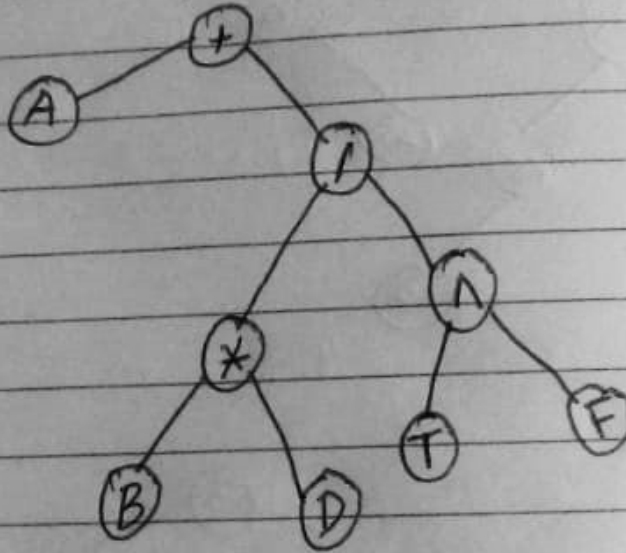
```
}
```

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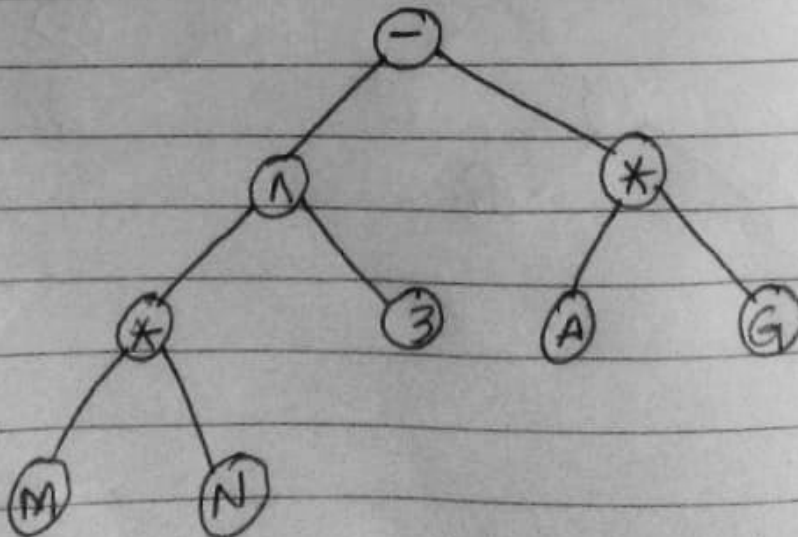
Task #3.

Consider the following list, Construct binary tree.

(i)  $A + B * D / T \wedge F$



(ii)  $(M * N) \wedge 3 - A * G$



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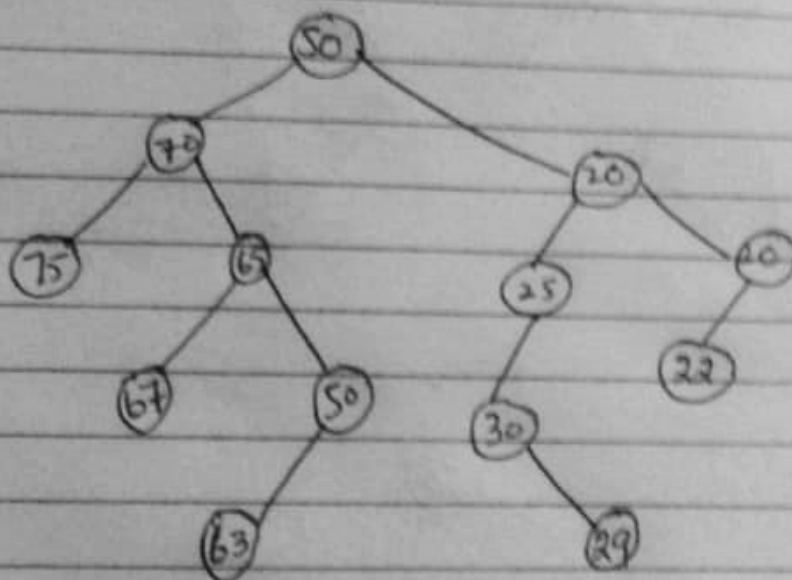
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Task # 2

Consider the following list



verification:

75, 70, 67, 65, 63, 50, 50, 30, 29, 25, 22, 20, 20