

Mosheur Rahman

ID: 181056042

```
int a[9] = {10, 20, 50, -10, 70, 5, 15, 0, -50};
```

```
main() {
```

```
    quicksort(0, 8);
```

```
}
```

```
void exchange(int i, int j) {
```

```
    int x = a[i];
```

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

```
    a[j] = x;
```

```
}
```

```
int partition(int x, int z) {
```

```
    int i = x, j = z + 1;
```

```
    while (i < j) {
```

```
        i++; while (a[i] < a[x]) i++;
```

```
        j--; while (a[j] > a[x]) j--;
```

```
        if (i > j) exchange(i, j);
```

```
    };
```

```
    exchange(x, j);
```

```
    return j;
```

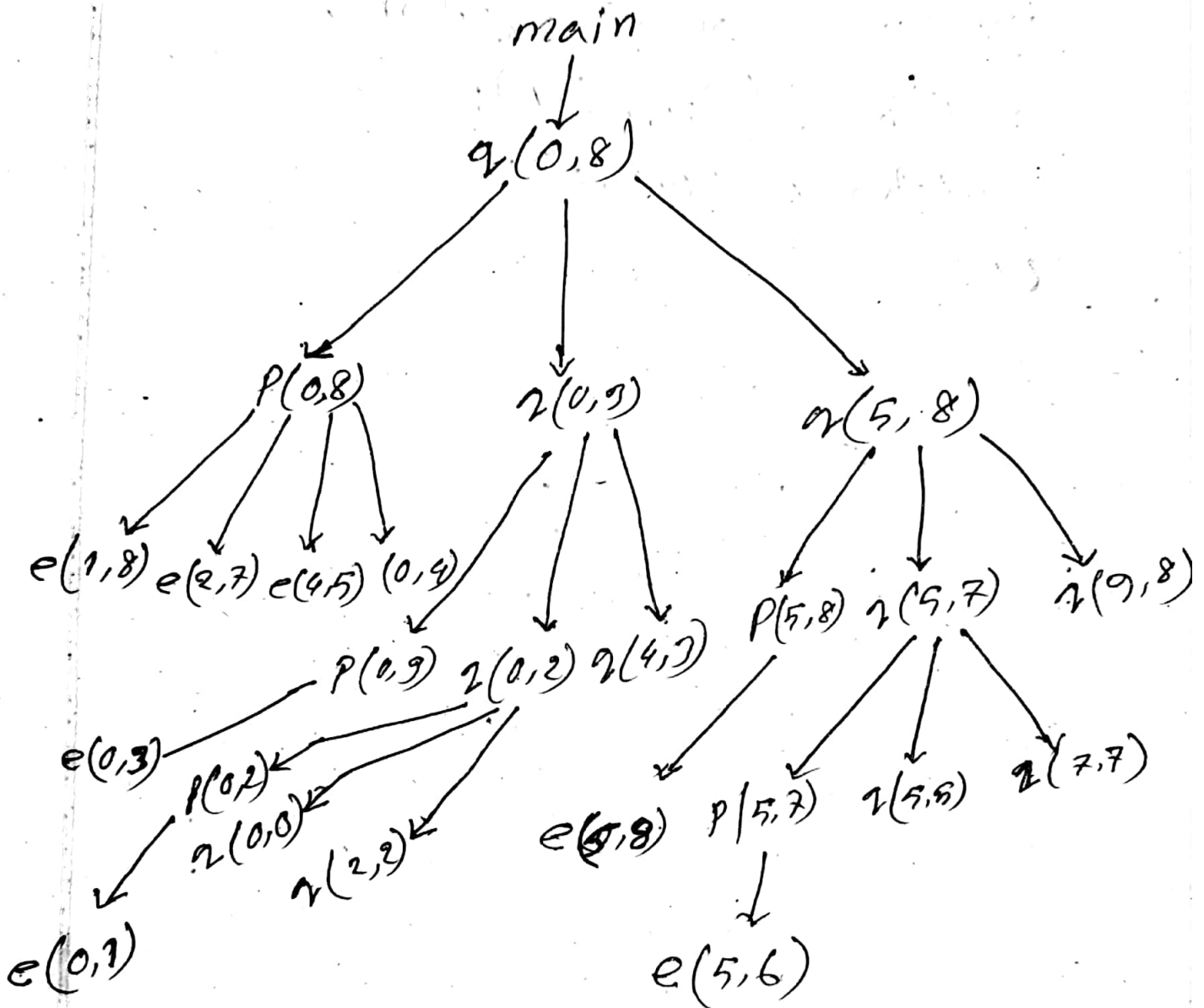
```
}
```

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```
void quicksort(int m, int n) {  
    if (n > m) {  
        int i = partition(m, n);  
        quicksort(m, i-1);  
        quicksort(i+1, n);  
    }  
}
```

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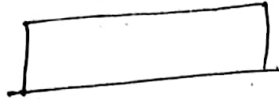
Activation trees:



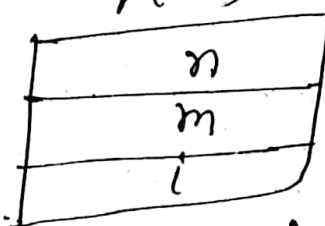
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Activation Record

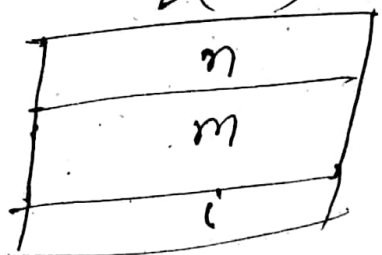
main()



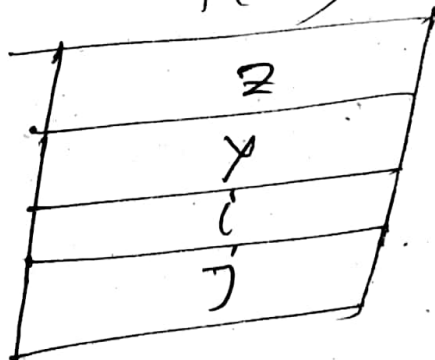
$q(0,8)$



$q(0,9)$



$p(0,3)$



$e(0,3)$

