



EAST WEST UNIVERSITY

Department of CSE

CSE207

Data Structures

Assignment no: 10

Submitted by-

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Id: 2020-1-60-189

Section: 04

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Submitted to-

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Submission Date: 16-03-2022

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```
#include <bits/stdc++.h>
```

```
using namespace std;
```

```
void towerOfHanoi(int n, char from, char to, char middle)
```

```
{
```

```
    if (n > 0)
```

```
    {
```

```
        towerOfHanoi(n-1, from, middle, to);
```

```
        cout << "Move disk " << n << " from rod " << from
```

```
              << " to rod" << to << endl;
```

```
        towerOfHanoi(n-1, middle, to, from);
```

```
    }
```

```
}
```

```
int main ()
```

```
{
```

```
    int n = 5;
```

```
    towerOfHanoi(n, 'X', 'Z', 'Y');
```

```
}
```

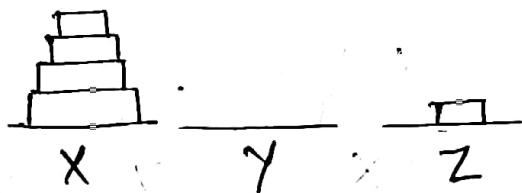
The simulation process of the recursive solution of the problem is written below —

Initially

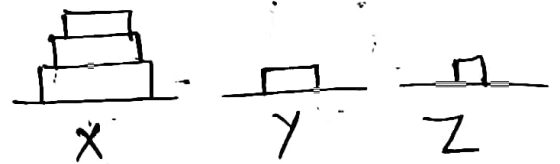


Steps

① smallest from X to Z



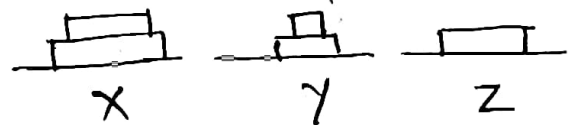
② second smallest from X to Y



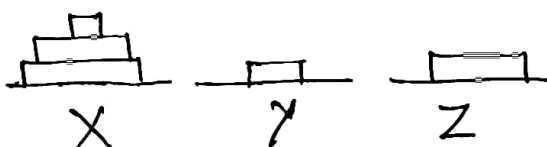
③ smallest from Z to Y



④ third largest from X to Z



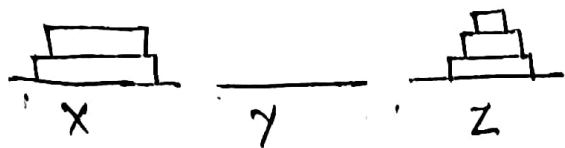
⑤ smallest from Y to X



⑥ third largest from Y to Z



⑦ smallest from X to Z



⑨ smallest from Z to Y.



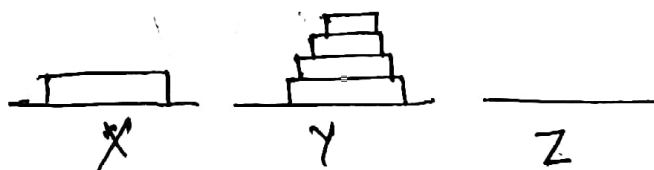
⑪ smallest from Y to X.



⑬ smallest from X to Z



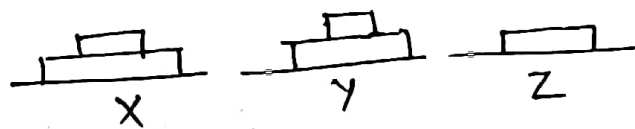
⑮ smallest from Z to Y.



⑧ second largest from X to Y.



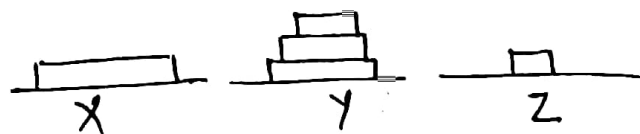
⑩ third largest from Z to X



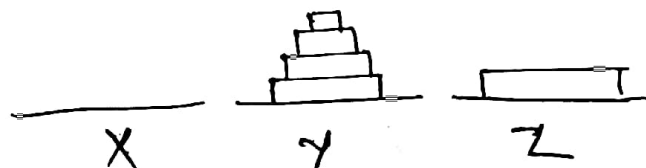
⑫ third largest from Z to Y.



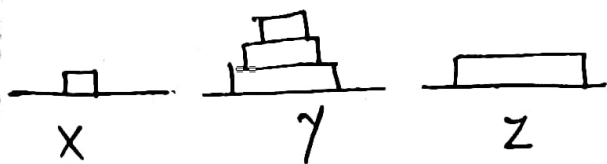
⑭ second smallest from X to Y.



⑯ largest from X to Z.



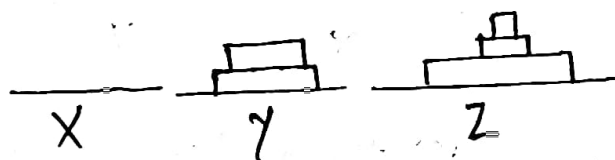
(17) smallest from γ to X.



(18) second smallest from γ to Z.



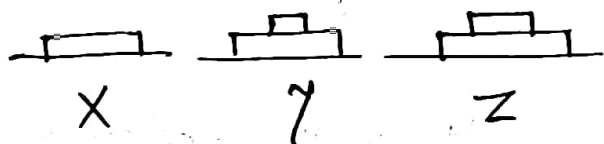
(19) smallest from X to Z.



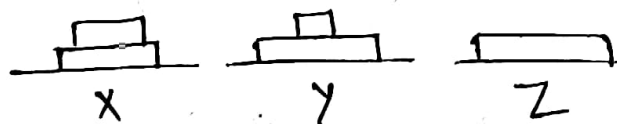
(20) third largest from γ to X.



(21) smallest from Z to γ .



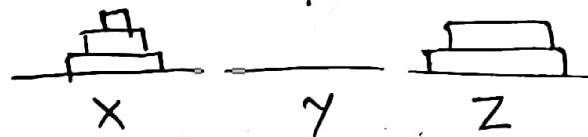
(22) third largest from Z to X.



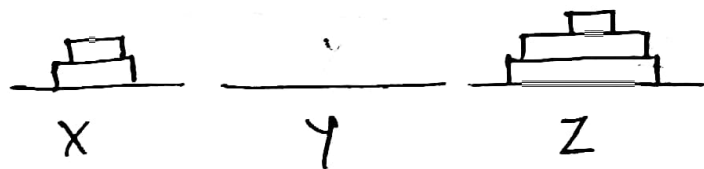
(23) smallest from γ to X.



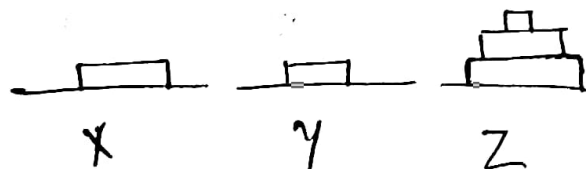
(24) second largest from γ to Z.



(25) smallest from X to Z.



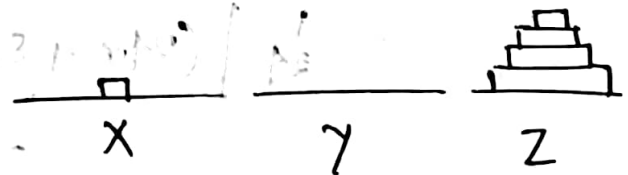
(26) second smallest from X to γ .



②7 smallest from Z to Y. ②8 third largest from X to Z.



②9 smallest from Y to X. ③0 second smallest from Y to Z.



③1 smallest from X to Z.

