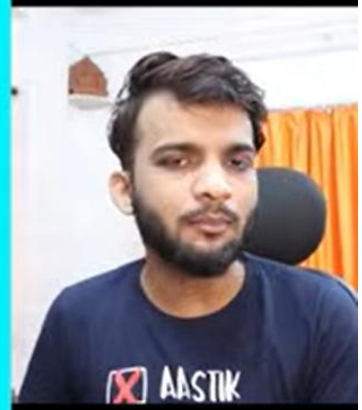
Recursion → When a function calls itself until a specified condition is met.

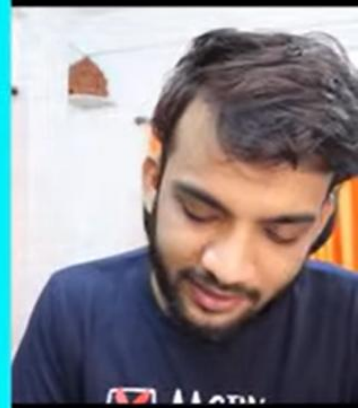


TUF

Recursion ?? → (When a function calls itself until a specified condition is met.

f()
{

f()
{



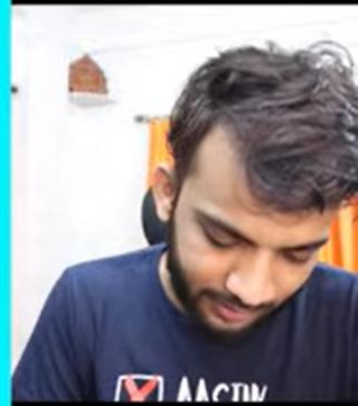
TUF

Recursion:

→ (When a function calls itself)

→ until a specified condition is met.

```
main()
{
  f();
}
```



Recursion :

→ (When a function calls itself)

→ until a specified condition is met.

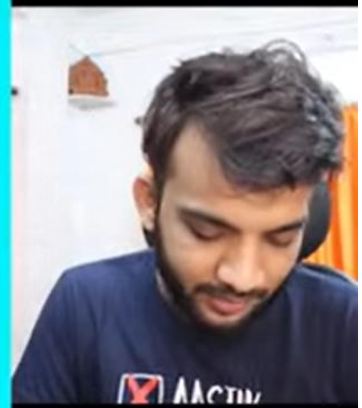
```
void f()
{
  print(1)
  f();
}

main()
{

  f();
}
```

TUF

Re 1. Introduction to Recursion | Recursion Tree | Stack Space | Strivers A2Z DSA Cou...

→ until a specified condition is met.

```
void f()
{
  print(1)
  f();
}

main()
{
  f();
}
```



3:28 / 22:45

```
void f()
{
print(1)
f();
}

main()
{
f();
}
```

Output

1

TUF

→ until a specified condition is met.

```
void f()
{
    print(1)
    f();
}

void f()
{
    print(1)
    f()
}

main()
{
    f();
}
```

Output

TUF

→ until a specified condition is met.

```
void f()
{
    print(1)
    f();
}

void f()
{
    print(1)
    f()
}

void f()
{
}

main()
{
    f();
}
```

Output

TUF

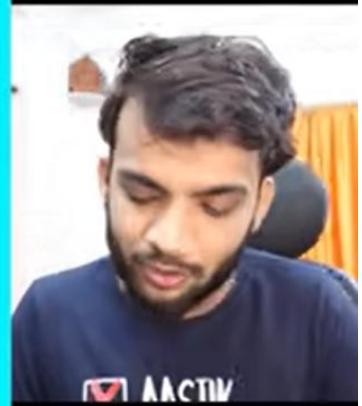
```
void f()
{
  print(1)
  f();
}

void f()
{
  print(1)
  f()
}

void f()
{
  print(1)
  f()
}

main()
{
  f();
}
```

Output

1

1

1



TUF

→ until a specified condition is met.

```
void f()
{
  print(1)
  f();
}

void f()
{
  print(1)
  f()
}

void f()
{
  print(1)
  f()
}

void f()
{
  print(1)
  f();
}

main()
{
  f();
}
```

Output

TUF

Recursion !! → (When a function calls itself)

→ until a specified condition is met.

```
void f()
{
  print(1)
  f();
}

void f()
{
  print(1)
  f()
}

void f()
{
  print(1)
  f()
}

void f()
{
  print(1)
  f();
}

main()
{
  f();
}
```

TUF

condition is met.

```
void f()
{
  print(1)
  f()
}
```

```
void f()
{
  print(1)
  f();
}
```

Output

TUF

code.cpp

```cpp
#include<bits/stdc++.h>
using namespace std;

void print() {
    cout << 1 << endl;
    print();
}

int main() {
    #ifndef ONLINE_JUDGE
    freopen("input.txt", "r", stdin);
    freopen("output.txt", "w", stdout);
    #endif

    print();

    return 0;
}
```

input.txt

```
1
```

output.txt

```
299  1
300  1
301  1
302  1
303  1
304  1
305  1
306  1
307  1
308  1
309  1
310  1
311  1
312  1
313  1
```

```
bash: line 1: 32281 Segmentation fault: 11  '/Users/striver/Desktop/SublimeFolder/code'
[Finished in 2.5s with exit code 139]
[cmd: ['bash', '-c', "g++ -std=c++14 '/Users/striver/Desktop/SublimeFolder/code.cpp' -o '/Users/striver/Desktop/SublimeFolde
code' && '/Users/striver/Desktop/SublimeFolder/code'"]]
[dir: /Users/striver/Desktop/SublimeFolder]
[path: /usr/local/bin:/usr/bin:/bin:/usr/sbin:/sbin]
```

TUF

code.cpp

```cpp
#include<bits/stdc++.h>
using namespace std;

void print() {
    cout << 1 << endl;
    print();
}

int main() {
    #ifndef ONLINE_JUDGE
    freopen("input.txt", "r", stdin);
    freopen("output.txt", "w", stdout);
    #endif

    print();

    return 0;
}
```

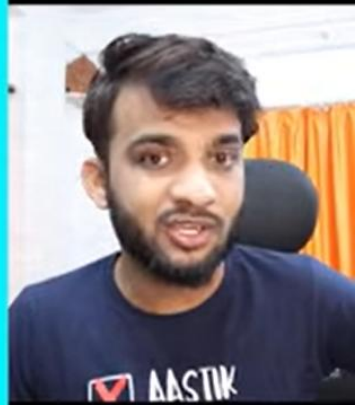
input.txt

```
1
```

output.txt

```
119 1
120 1
121 1
122 1
123 1
124 1
125 1
126 1
127 1
128 1
129 1
130 1
131 1
132 1
```

```
bash: line 1: 32711 Segmentation fault: 11  '/Users/striver/Desktop/SublimeFolder/code'
[Finished in 2.6s with exit code 139]
[cmd: ['bash', '-c', "g++ -std=c++14 '/Users/striver/Desktop/SublimeFolder/code.cpp' -o '/Users/striver/Desktop/SublimeFolde
code' && '/Users/striver/Desktop/SublimeFolder/code'"]]
[dir: /Users/striver/Desktop/SublimeFolder]
[path: /usr/local/bin:/usr/bin:/bin:/usr/sbin:/sbin]
```



TUF

code.cpp

```cpp
#include<bits/stdc++.h>
using namespace std;

void print() {
    cout << 1 << endl;
    print();
}

int main() {
    #ifndef ONLINE_JUDGE
    freopen("input.txt", "r", stdin);
    freopen("output.txt", "w", stdout);
    #endif

    print();

    return 0;
}
```

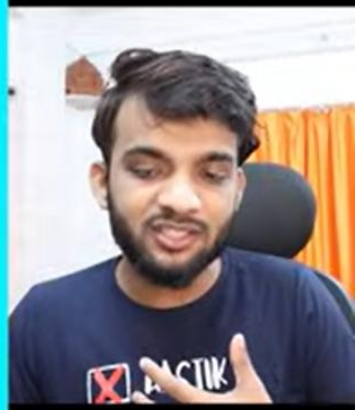
input.txt

```
1
```

output.txt

```
523024  1
523025  1
523026  1
523027  1
523028  1
523029  1
523030  1
523031  1
523032  1
523033  1
523034  1
523035  1
523036  1
523037  1
523038
```

```
bash: line 1: 32711 Segmentation fault: 11  '/Users/striver/Desktop/SublimeFolder/code'
[Finished in 2.6s with exit code 139]
[cmd: ['bash', '-c', "g++ -std=c++14 '/Users/striver/Desktop/SublimeFolder/code.cpp' -o '/Users/striver/Desktop/SublimeFolde
code' && '/Users/striver/Desktop/SublimeFolder/code'"]]
[dir: /Users/striver/Desktop/SublimeFolder]
[path: /usr/local/bin:/usr/bin:/bin:/usr/sbin:/sbin]
```



code.cpp

```cpp
#include<bits/stdc++.h>
using namespace std;

void print() {
    cout << 1 << endl;
    print();
}

int main() {
    #ifndef ONLINE_JUDGE
    freopen("input.txt", "r", stdin);
    freopen("output.txt", "w", stdout);
    #endif

    print();

    return 0;
}
```

input.txt

```
1
```

output.txt

```
523024  1
523025  1
523026  1
523027  1
523028  1
523029  1
523030  1
523031  1
523032  1
523033  1
523034  1
523035  1
523036  1
523037  1
523038
```

```
bash: line 1: 32711 Segmentation fault: 11  '/Users/striver/Desktop/SublimeFolder/code'
[Finished in 2.6s with exit code 139]
[cmd: ['bash', '-c', "g++ -std=c++14 '/Users/striver/Desktop/SublimeFolder/code.cpp' -o '/Users/striver/Desktop/SublimeFolde
code' && '/Users/striver/Desktop/SublimeFolder/code'"]]
[dir: /Users/striver/Desktop/SublimeFolder]
[path: /usr/local/bin:/usr/bin:/bin:/usr/sbin:/sbin]
```

TUF

```
void f()
{
    print(1)
    f();
}

void f()
{
    print(1)
    f()
}

void f()
{
    print(1)
    f()
}

void f()
{
    print(
    f()
}

main()
{
    f();
}
```

Output

1

→ Until a specified [illegible]

```
void f()
{
    print(1)
    f();
}
```

```
void f()
{
    print(1)
    f()
}
```

```
void f()
{
    print(1)
    f()
}
```

```
void f(
{
    print(
    f()
}
```

```
main()
{
    f();
}
```

Output

1

TUF

→ Init a specific area

```
void f()
{
  print(1)
  f();
}

void f()
{
  print(1)
  f()
}

void f()
{
  print(1)
  f()
}

void f(
{
  print(
  f()
}

main()
{
  f();
}
```

Stack

Output

1

TUF

void f()
{
print(1)
f();
}

void f()
{
print(1)
f()
}

void f()
{
print(1)
f()
}

void f(
{
print(
f()
}

main()
{
f();
}

Stack

f(), L2
f(), L2
f(), L2

Output

1

TUF

void f()
{
print(1)
f();
}

void f()
{
print(1)
f()
}

void f()
{
print(1)
f()
}

void f(
{
print(
f()
}

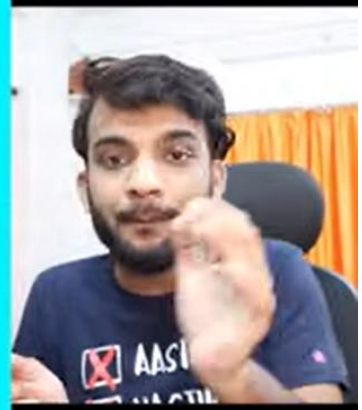
main()
{
f();
}

Stack

f(), L2
f(), L2
f(), L2

Output

1



print (1)
f();

print (1)
f()
}

print
f()
}

f();
}

main ()
{
f();
}

Stack

f(), L2
f(), L2
f(), L2

Output

1
1
1

TUF

print (1)

f();

main ()

{

f();

}

Stack

print (1)

f();

}

f()

f()

f()

f(), L2

f(), L2

f(), L2

print (1)

f()

}

f();

}

Segmentation

Stack overflow

Output

1

1

1

TUF

```
print(1)
f();
```

```
print(1)
f()
}
```

```
print(1)
f()
}
```

```
f();
}
```

```
main()
{
f();
}
```

Stack

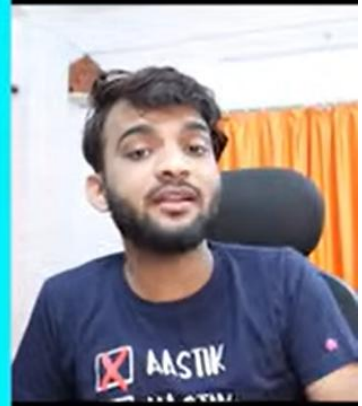
f()
f()
f()
f(), L2
f(), L2
f(), L2

Segmentation

Stack overflow

Output

1
1
1



TUF

```
void f()
{
print(1)
f();
}
```

```
void f()
{
print(1)
f()
}
```

```
{
print(1)
f()
}
```

```
{
print(1
f();
}
```

```
main()
{
f();
}
```

Stack

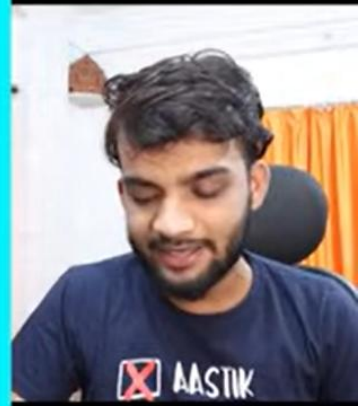
f()
f()
f()
f(), 22
f(), 22
f(), 12

Segmentation

Stack overflow

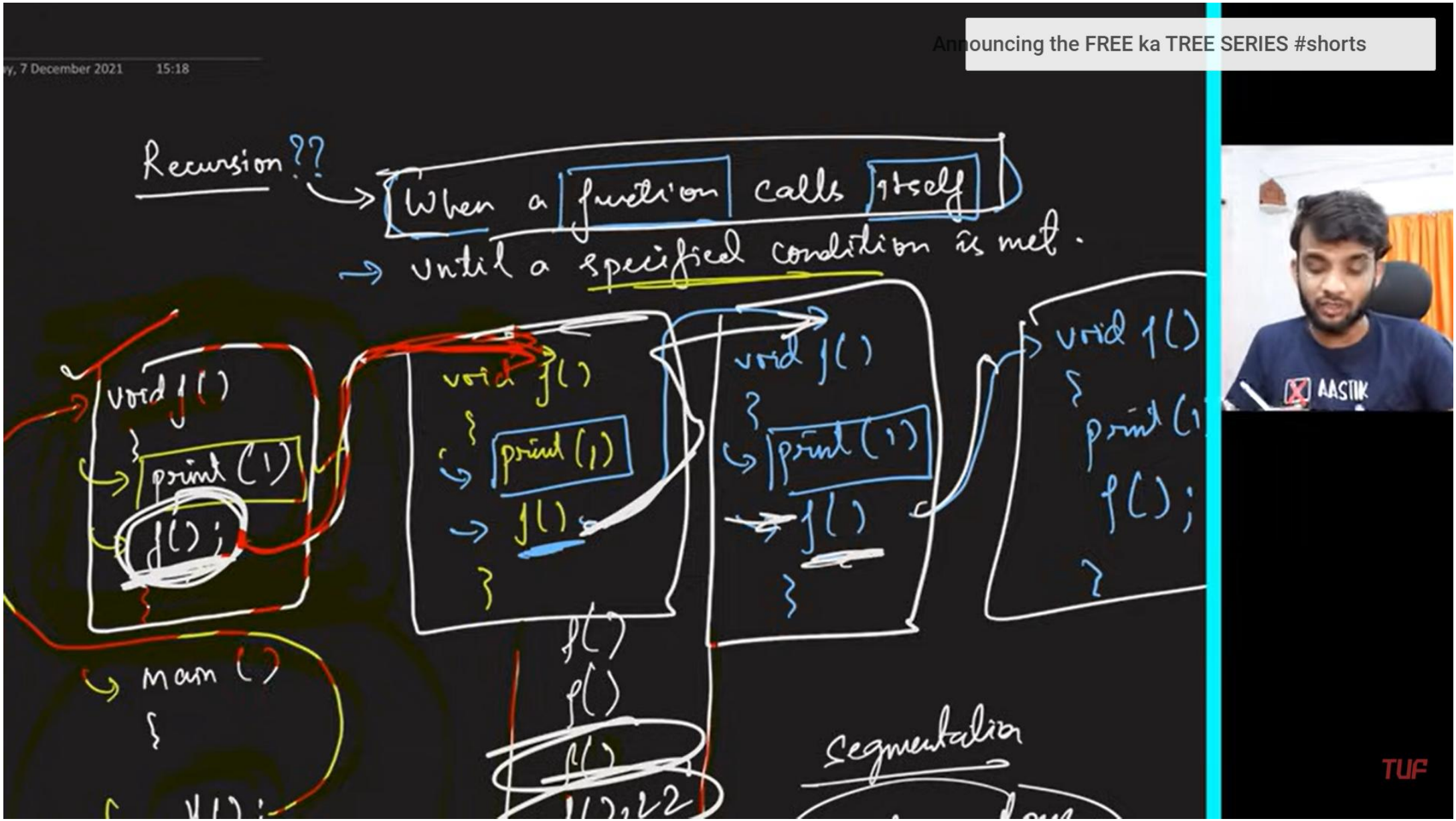
Output

1
1
1

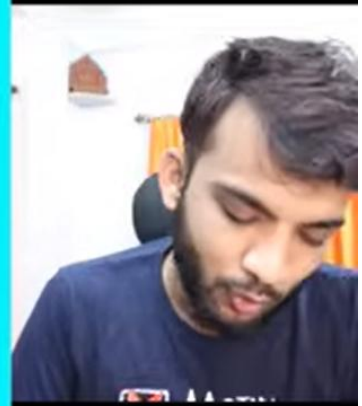


TUF

Announcing the FREE ka TREE SERIES #shorts



```
cnt = 0
f()
{
  print(cnt)
  cnt++;
  f();
}
```



TUF

```
cnt = 0

f()
{
  print(cnt)
  cnt++;

  f();
}

main()
{

  f();
}
```

TUF

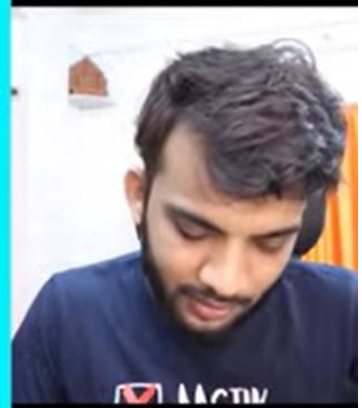
```
cnt = 0 + 2

f()
{
    print(cnt)
    cnt++;
    f();
}

main()
{
    f();
}
```

```
f()
{
    print(cnt)
    cnt++;
    f();
}
```

Output

0

1



```
cnt = 0 + 2

f()
{
  print(cnt)
  cnt++;
  f();
}

main()
{
  f();
}
```

```
f()
{
  print(cnt)
  cnt++;
  f();
}
```

```
f()
{
  print(cnt)
  cnt++
  f()
}
```

Output

0

1

2

TUF

cnt = ~~0 + 2~~ 3

```
f()
{
  print(cnt)
  cnt++;
  f();
}
```

```
f()
{
  print(cnt)
  cnt++;
  f();
}
```

```
f()
{
  print(cnt)
  cnt++
  f()
}
```

Base Condition

```
main()
{
  f();
}
```

Output

0
1
2

cnt = ~~0 + 2~~ 3

```
f()
{
  print(cnt)
  cnt++;
  f();
}
```

```
f()
{
  print(cnt)
  cnt++;
  f();
}
```

```
f()
{
  print(cnt)
  cnt++
  f()
}
```

(Base Condition)

```
main()
{
  f();
}
```

Output

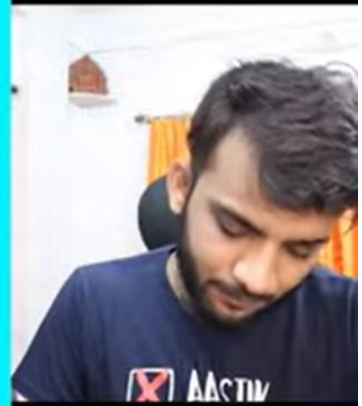
0

1

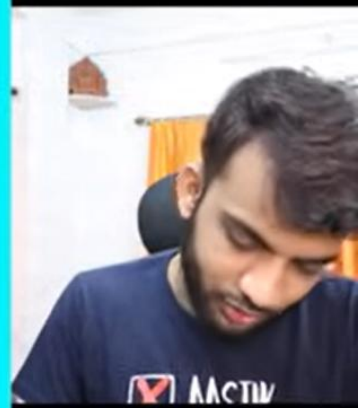
2

TUF

```
cnt=0
f()
{
  if(cnt==4)
      return;
  print(cnt)
  cnt++
  f()
  }
n
```



```
cnt=0
f()
{
  if(cnt==4)
      return;
  print(cnt)
  cnt++
  f()
  }
main()
 {
  f();
 }
```



TUF

```
cnt=0
f()
{
  if(cnt==4)
    return;
  print(cnt)
  cnt++
  f()
}
main()
{
  f();
}
```

Output

TUF

```
cnt = 0 1
f()
{
  if (cnt == 4)  X
    return;
  print(cnt)
  cnt++
  f()
}
main()
{
  f();
}
```

Output

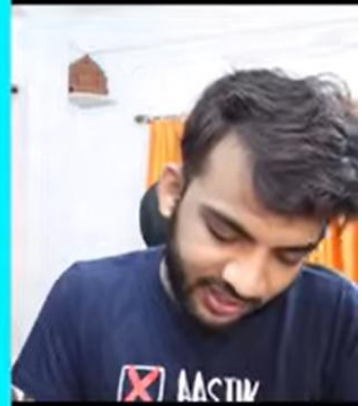
0

TUF

```
}

main()
{
    f();
}
```

Output

0



TUF

3

cnt = ~~0~~ 1

```
f()
{
  if(cnt == 4)
    return;
  print(cnt)
  cnt++
  f()
}

main()
{
  f();
```

```
f()
{
  if(cnt == 4)
    return;
  print(cnt)
  cnt++;
  f();
}
```

Output

0

TUF

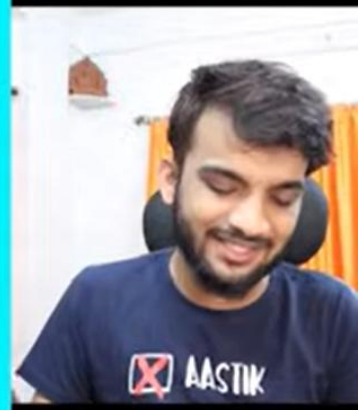
```
cnt = 0
f()
{
  if(cnt == 4)
    return;
  print(cnt)
  cnt++
  f()
}
main()
{
  f();
}
```

```
f()
{
  if(cnt == 4)
    return;
  print(cnt)
  cnt++;
  f();
}
```

Output

0

1



TUF

cnt = ~~0~~ 2

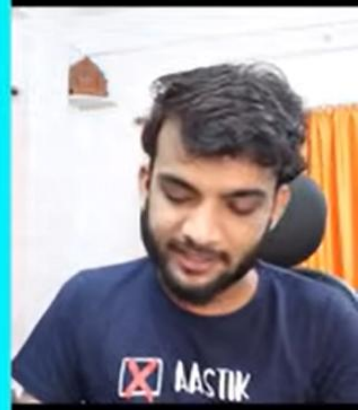
```
f()
{
  if(cnt == 2)
    return;
  print(cnt)
  cnt++
  f()
}

main()
{
  f();
```

```
f()
{
  if(cnt == 2)
    return;
  print(cnt)
  cnt++;
  f();
}
```

```
f()
{
  if(cnt == 3)
    return
  print(cnt)
  cnt++
```

Output

0



TUF

```
f()
}
```

```
f();
}
```

```
f();
}
```

```
main()
{
f();
}
```

Output

0

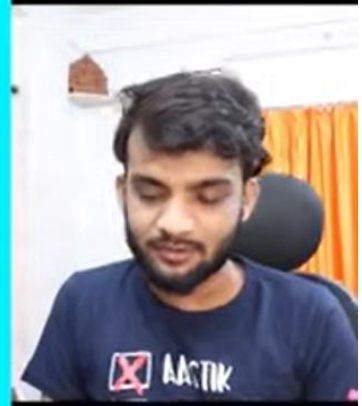
1

2

f(), L5

f(), L5

f(), L5



TUF

cnt = ~~2~~ 3

```
f()
{
  if(cnt == 3) ×
    return;
  print(cnt)
  cnt++
  f()
}
```

```
f()
{
  if(cnt == 2) ×
    return;
  print(cnt) ✓
  cnt++; ✓
  f();
}
```

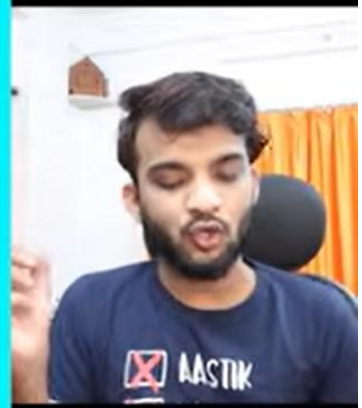
```
f()
{
  if(cnt == 3) ×
    return
  print(cnt)
  cnt++
  f();
}
```

```
main()
{
  f();
```

Output

0

1



TUF

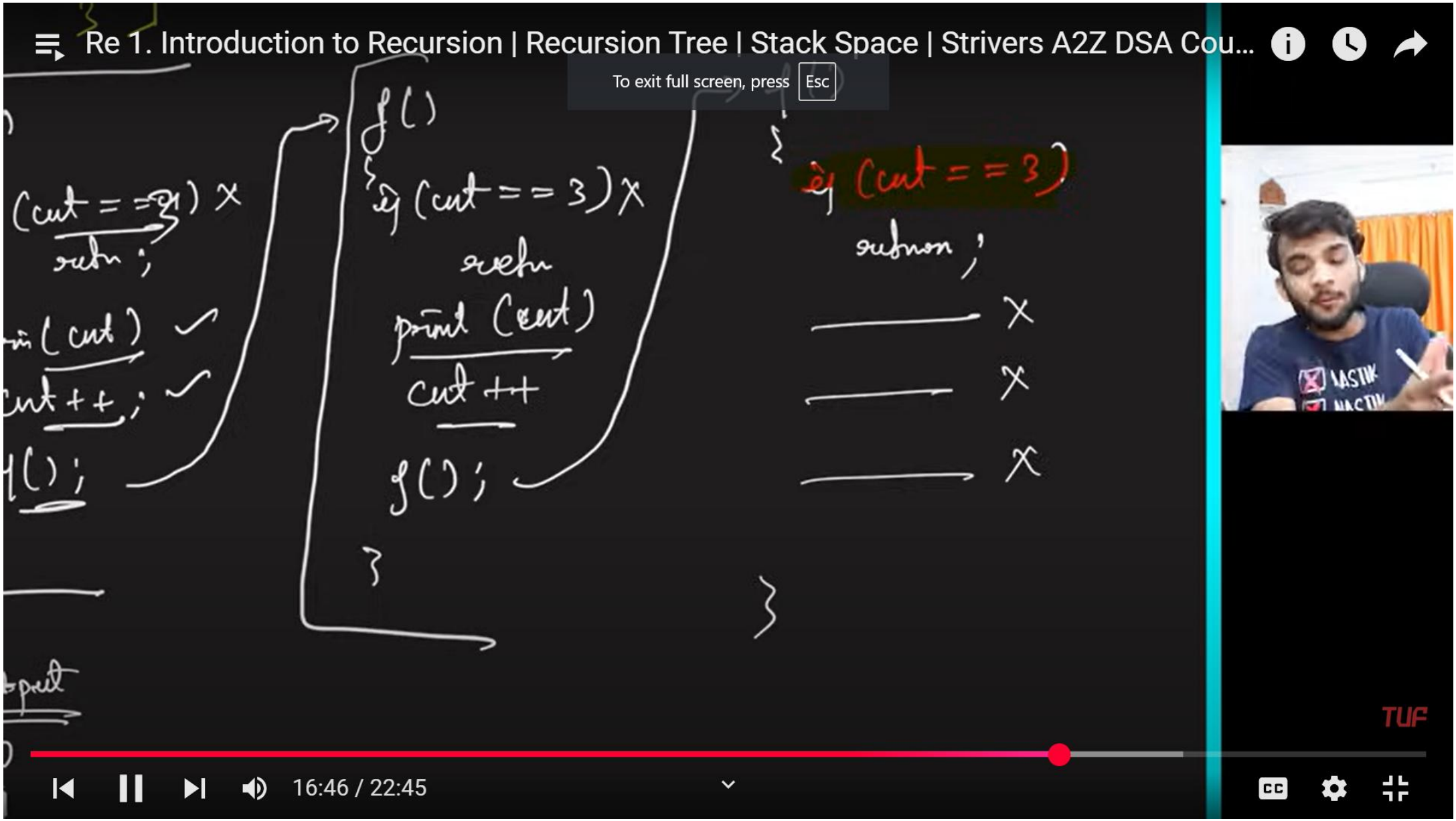
Let's give back to the community :)

```
(cnt == 3) ✗
return;
print(cnt) ✓
cnt++; ✓
f();
```

```
f()
{
if (cnt == 3) ✗
return
print(cnt)
cnt++
f();
}
```

```
f()
{
if (cnt == 3)
return;
```

TUF


Re 1. Introduction to Recursion | Recursion Tree | Stack Space | Strivers A2Z DSA Cou...
To exit full screen, press Esc
f()
if (cnt == 3)
return
print (cnt)
cnt++
f();
if (cnt == 3)
return;
TUF
16:46 / 22:45

```
(cnt == 3) ✗
return;
print(cnt) ✓
cnt++; ✓
f();
```

```
f()
{
if (cnt == 3) ✗
return
print(cnt)
cnt++
f();
}
```

```
f()
{
if (cnt == 3)
return;
}
```

✗

✗

✗

cnt = ~~0~~ ~~1~~ 3

```
f()
{
  if(cnt == ~~1~~ 3)
    return;
  print(cnt)
  cnt++
  f()
}
```

```
f()
{
  if(cnt == 1)
    return;
  print(cnt)
  cnt++;
  f();
}
```

```
f()
{
  if(cnt == 3)
    return
  print(cnt)
  cnt++
  f();
}
```

```
main()
{
  f();
}
```

Output

0

1

TUF

```
f()
{
  if(cnt == 3)
    return;
  print(cnt)
  cnt++
  f()
}
main()
{
  f();
}
```

```
f()
{
  if(cnt == 1)
    return;
  print(cnt)
  cnt++;
  f();
}
```

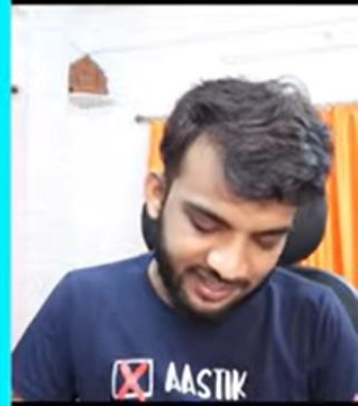
```
f()
{
  if(cnt == 3)
    return
  print(cnt)
  cnt++
  f();
}
```

Output

0

1

2



TUF

```
cnt = 0

f()
{
  if(cnt == 2)
    return;
  print(cnt)
  cnt++
  f()
}

main()
{
  f();
}
```

```
f()
{
  if(cnt == 2)
    return;
  print(cnt)
  cnt++;
  f();
}
```

```
f()
{
  if(cnt == 3)
    return
  print(cnt)
  cnt++
  f();
}
```

Output

0

1

2

TUF

esday, 7 December 2021 15:18

Recursion??

When a function calls itself until a specified condition is met.

```
void f()
{
    print(1)
    f();
}
```

```
void f()
{
    print(1)
    f()
}
```

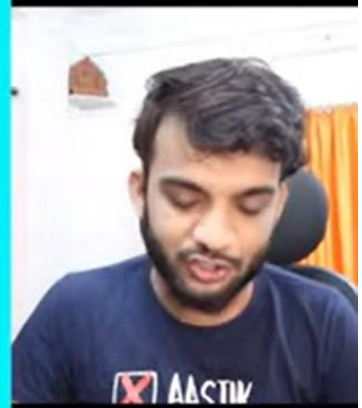
```
void f()
{
    print(1)
    f()
}
```

```
void f(
{
    print(
    f()
}
```

```
main()
{
    f();
```

f()
f()
f()
f()2

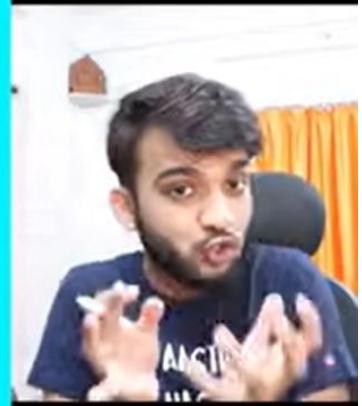
segmentation



TUF

```
f()
{
if (cnt == 3)
return
print (cnt)
cnt++
f();
}
```

```
f()
{
if (cnt == 3)
return;
}
```



TUF

```
f()
{
if (cnt == 3)
return
print (cnt)
cnt++
f();
}
```

```
if (cnt == 3)
return;
```

TUF

```
f()
{
}
main()
{
f();
}
```

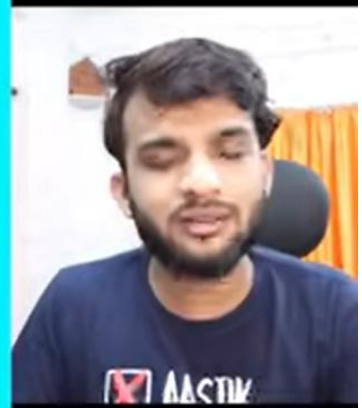
Output

0

1

2

Base Condition



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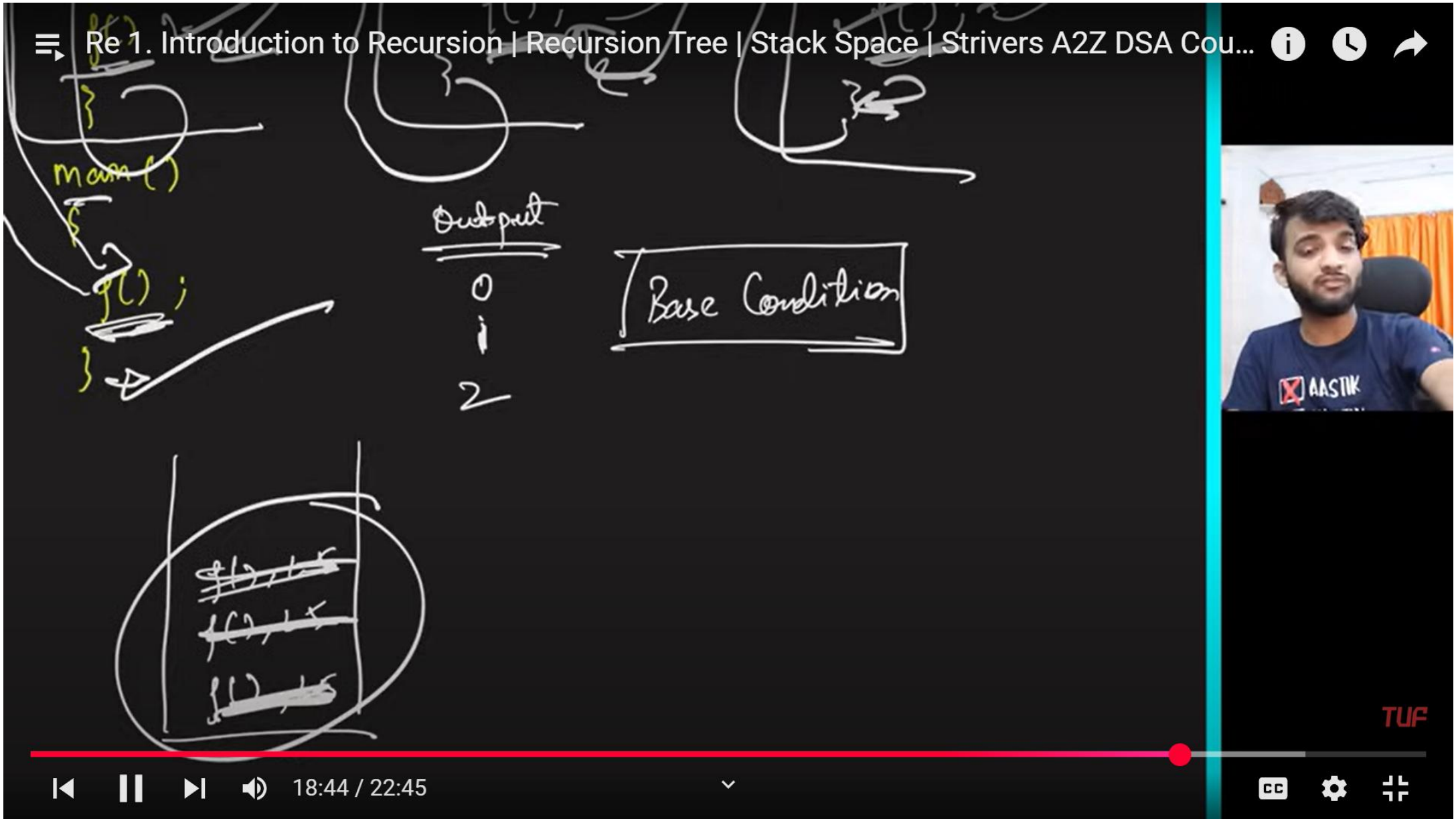


18:44 / 22:45

code.cpp

```cpp
#include<bits/stdc++.h>
using namespace std;

void print() {
    cout << 1 << endl;
    print();
}

int main() {
    #ifndef ONLINE_JUDGE
    freopen("input.txt", "r", stdin);
    freopen("output.txt", "w", stdout);
    #endif

    print();

    return 0;
}
```

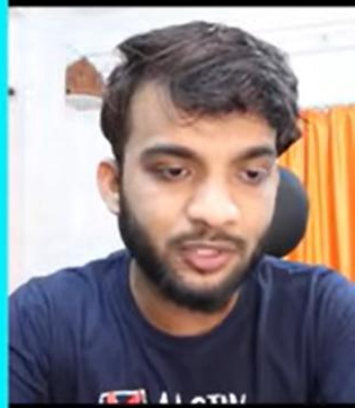
input.txt

```
1
```

output.txt

```
523024  1
523025  1
523026  1
523027  1
523028  1
523029  1
523030  1
523031  1
523032  1
523033  1
523034  1
523035  1
523036  1
523037  1
523038
```

```
bash: line 1: 32711 Segmentation fault: 11  '/Users/striver/Desktop/SublimeFolder/code'
[Finished in 2.6s with exit code 139]
[cmd: ['bash', '-c', "g++ -std=c++14 '/Users/striver/Desktop/SublimeFolder/code.cpp' -o '/Users/striver/Desktop/SublimeFolde
code' && '/Users/striver/Desktop/SublimeFolder/code'"]]
[dir: /Users/striver/Desktop/SublimeFolder]
[path: /usr/local/bin:/usr/bin:/bin:/usr/sbin:/sbin]
```



code.cpp

```cpp
#include<bits/stdc++.h>
using namespace std;
int cnt = 0;
void print() {
    if(cnt == 3) return;
    cout << cnt << endl;
    cnt++;
    print();
}

int main() {
    #ifndef ONLINE_JUDGE
    freopen("input.txt", "r", stdin);
    freopen("output.txt", "w", stdout);
    #endif

    print();

    return 0;
}
```

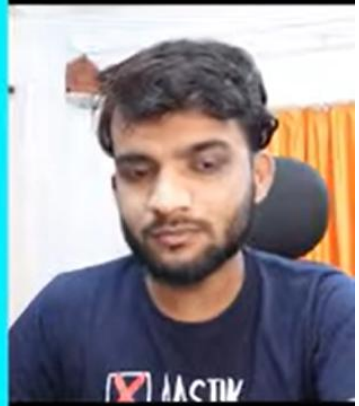
input.txt

```
1
```

output.txt

```
523024  1
523025  1
523026  1
523027  1
523028  1
523029  1
523030  1
523031  1
523032  1
523033  1
523034  1
523035  1
523036  1
523037  1
523038
```

```
bash: line 1: 32711 Segmentation fault: 11  '/Users/striver/Desktop/SublimeFolder/code'
[Finished in 2.6s with exit code 139]
[cmd: ['bash', '-c', "g++ -std=c++14 '/Users/striver/Desktop/SublimeFolder/code.cpp' -o '/Users/striver/Desktop/SublimeFolde
code' && '/Users/striver/Desktop/SublimeFolder/code'"]]
[dir: /Users/striver/Desktop/SublimeFolder]
[path: /usr/local/bin:/usr/bin:/bin:/usr/sbin:/sbin]
```



code.cpp

```cpp
#include<bits/stdc++.h>
using namespace std;
int cnt = 0;
void print() {
    if(cnt == 3) return;
    cout << cnt << endl;
    cnt++;
    print();
}

int main() {
    #ifndef ONLINE_JUDGE
    freopen("input.txt", "r", stdin);
    freopen("output.txt", "w", stdout);
    #endif

    print();

    return 0;
}
```

input.txt

```
1
```

output.txt

```
0
1
2
```

[Finished in 1.4s]

cnt = ~~2~~ 3

```
f()
{
  if(cnt == 3)
    return;
  print(cnt)
  cnt++
  f()
}
main()
{
  f();
```

```
f()
{
  if(cnt == 2)
    return;
  print(cnt)
  cnt++;
  f();
}
```

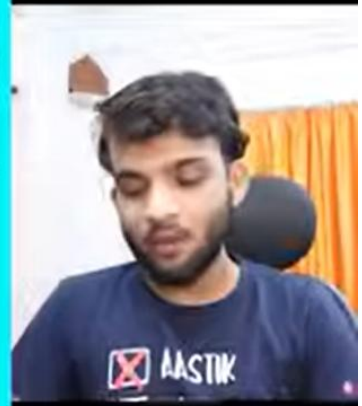
```
f()
{
  if(cnt == 3)
    return
  print(cnt)
  cnt++
  f();
}
```

Output

0

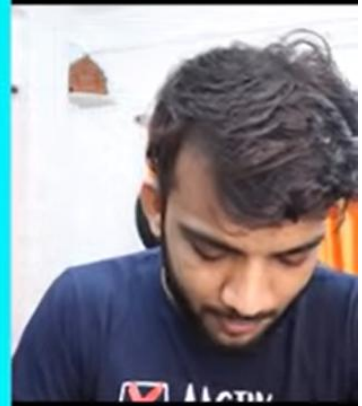
1

Base Condition



TUF

Recursion Tree



TUF

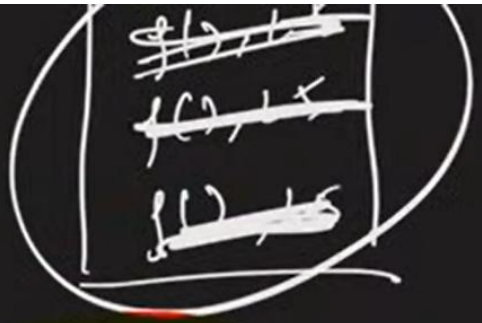
```
f()
{
if (cnt == 3)
return
print (cnt)
cnt ++
f();
}
```

```
f()
{
if (cnt == 3)
return;
}
```

```
}
```

Condition

TUF



Recursion Tree

1

TUF

main()

f();

}

Output

0

1

2

Base Condition

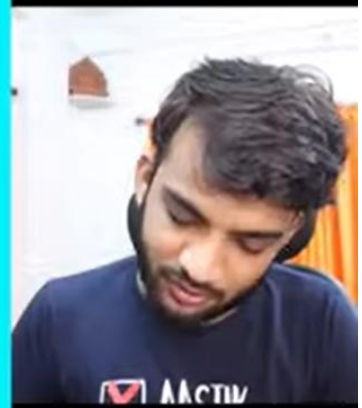
f()

f()

f()

Recursion Tree

f()



TUF

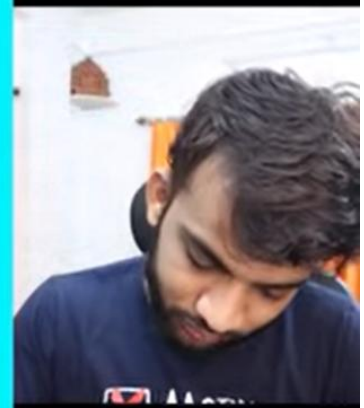
Recursion Tree

f()

f()

f()

f()



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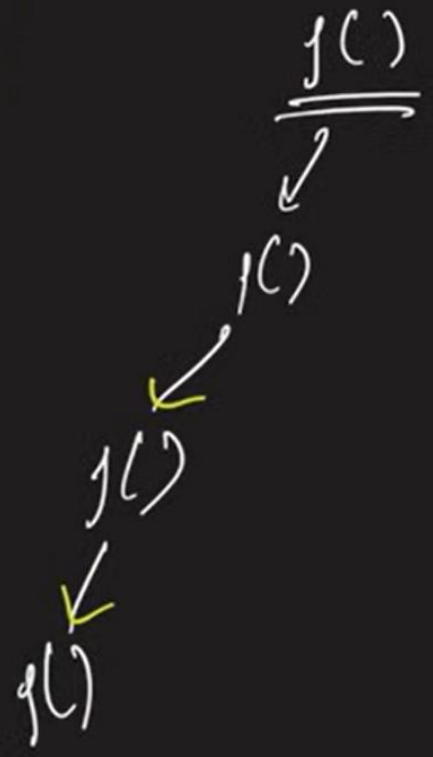
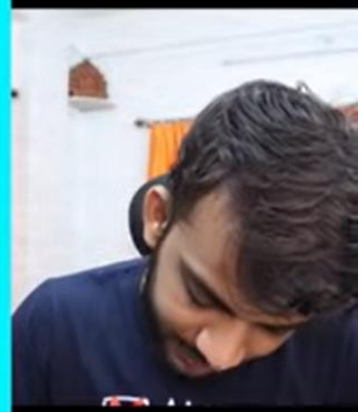
Recursion Tree





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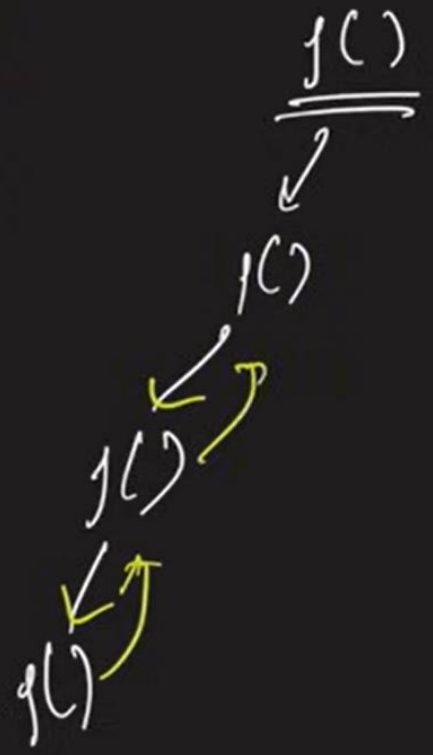
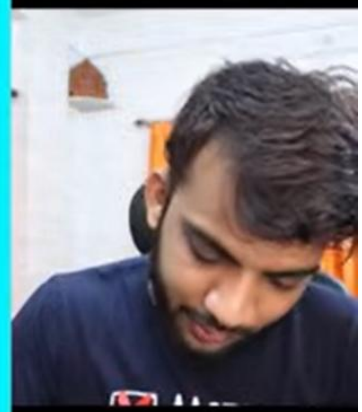
Recursion Tree





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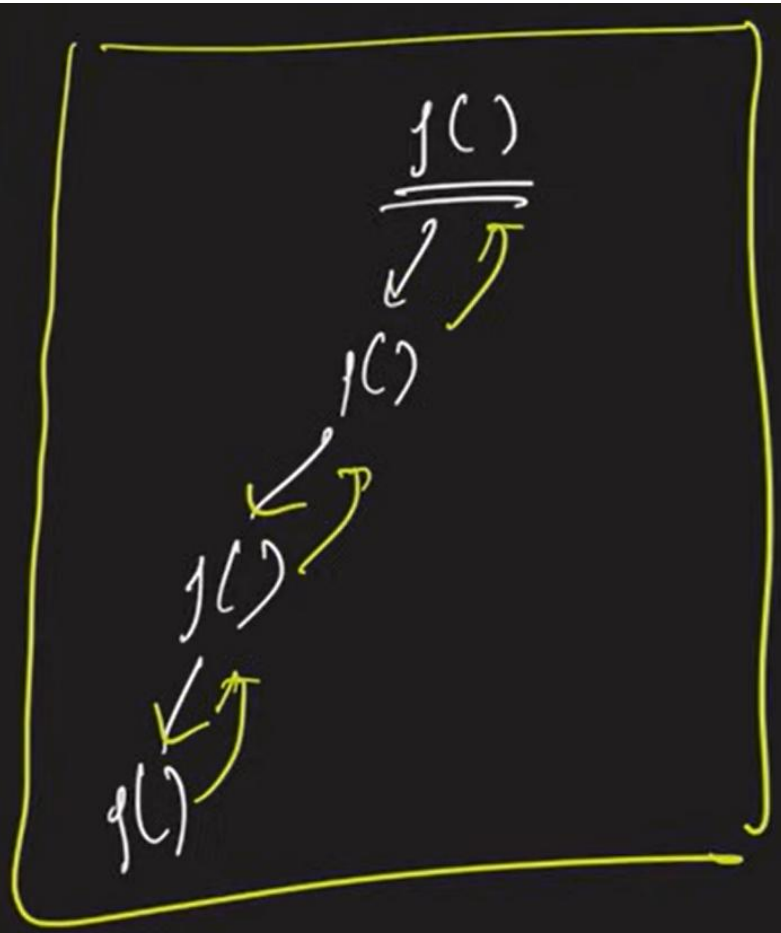
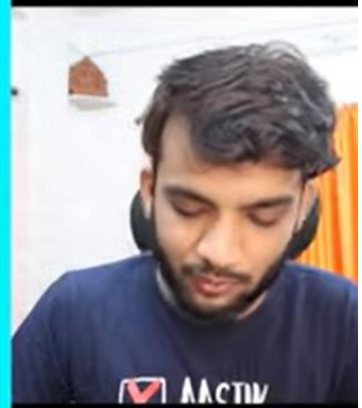
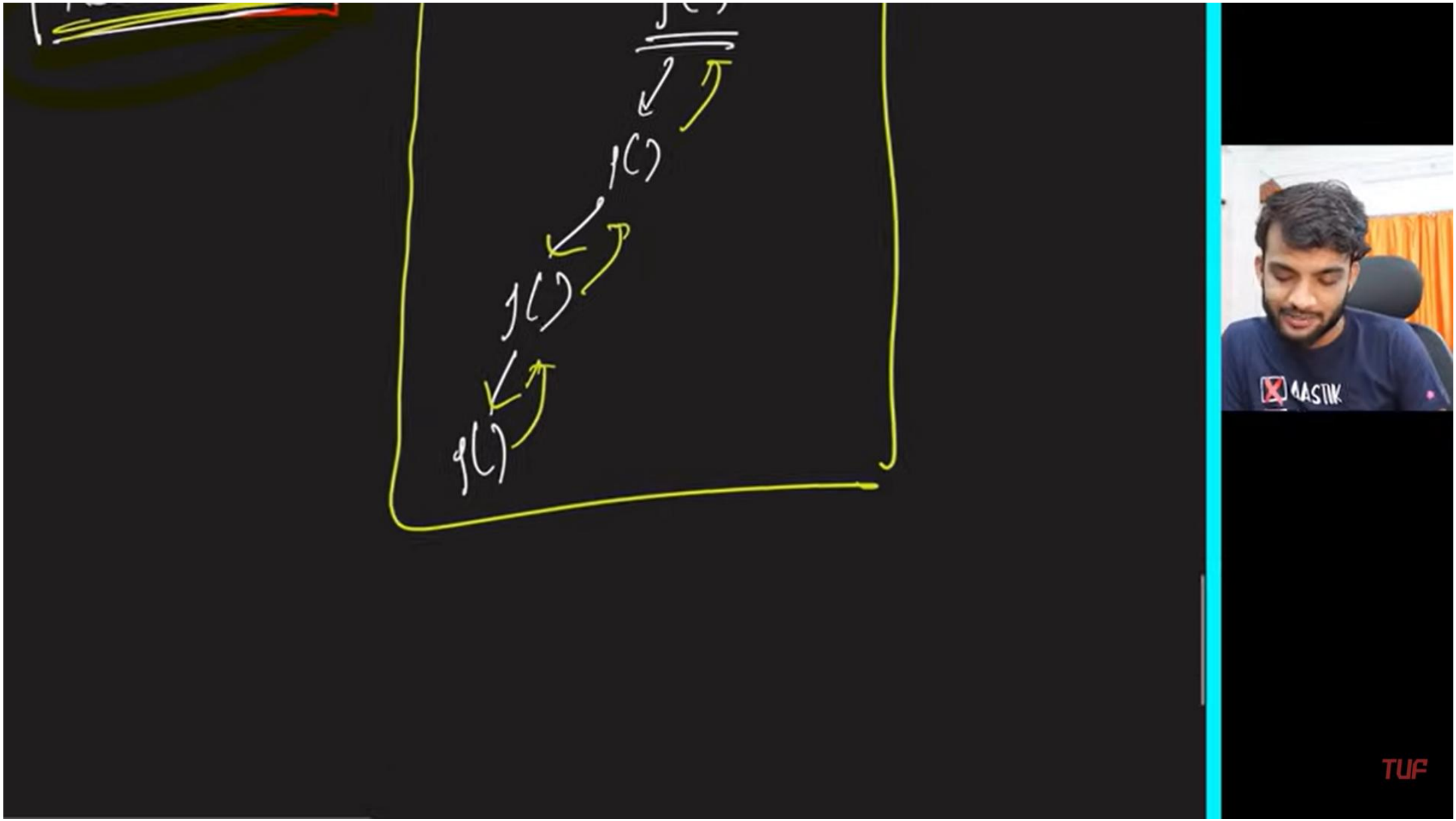
Recursion Tree





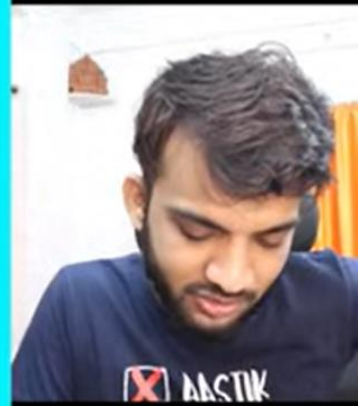
TUF


f()
f()
f()
f()
MASTIK
TUF

$f(\ )$

→ Recursion

→ Base



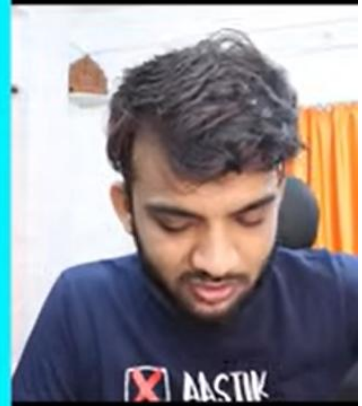
TUF

$f(\ )$

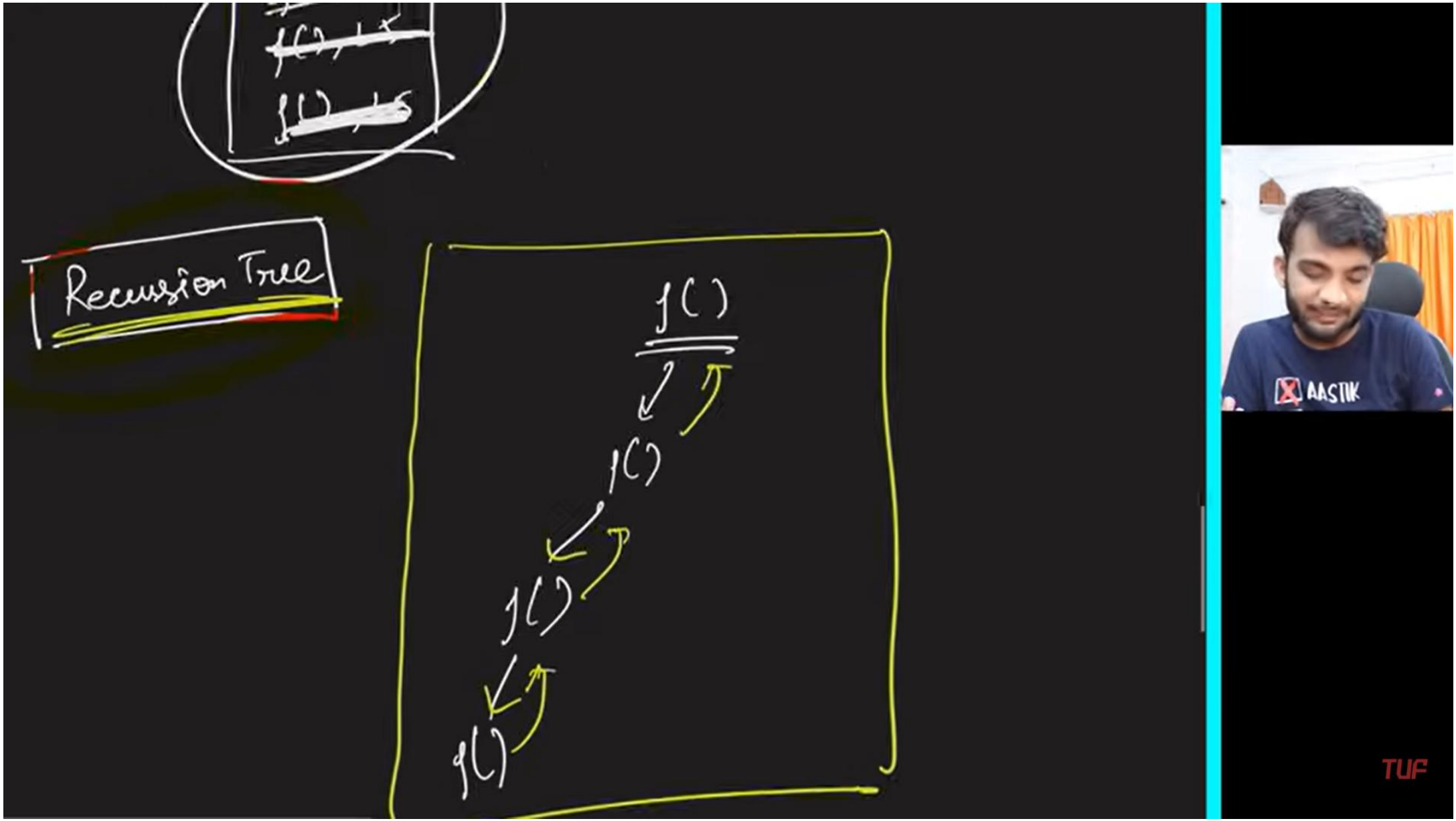
→ Recursion

→ Base Case

→ Stack overflow



TUF

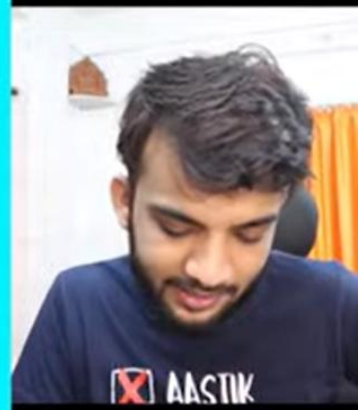

Recursion Tree
f()
f()
f()
f()
AASTIK
TUF

→ Recursion

→ Base Case

→ Stack overflow | Stack space

→ '



TUF

→ Recursion

→ Base Case

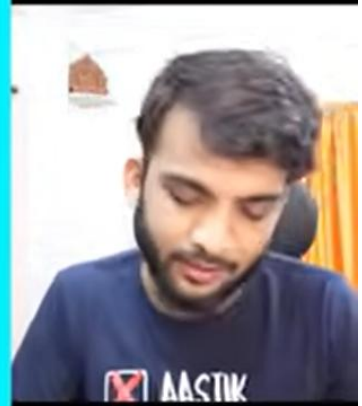
→ Stack overflow | Stack space

→ Recursion Tree

TUF

g()

- → Recursion
- → Base Case
- → Stack overflow | Stack space
- → Recursion Tree



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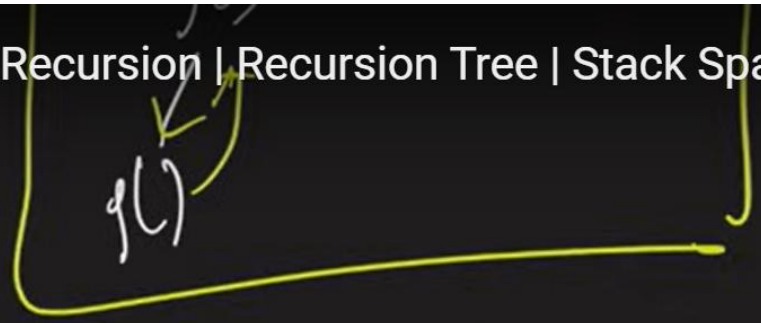
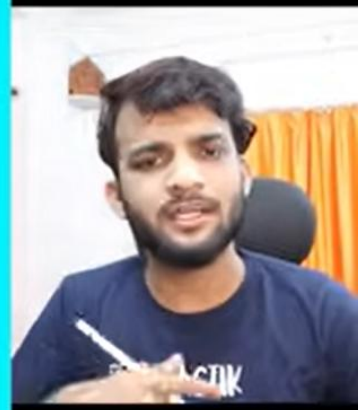


- → Recursion
- → Base Case
- → Stack overflow | Stack space
- → Recursion Tree



TUF

22:06 / 22:45

g()
Instagram
striver_79
149 posts
8913 followers
468 following
Following
Tree
@STRIVER_79
RAJ
TUF

youtube.com/watch?v=yVdKa8dnKiE&list=PLgUwDviBIf0rGlzIn_7rsaR2FQ5e6ZOL9

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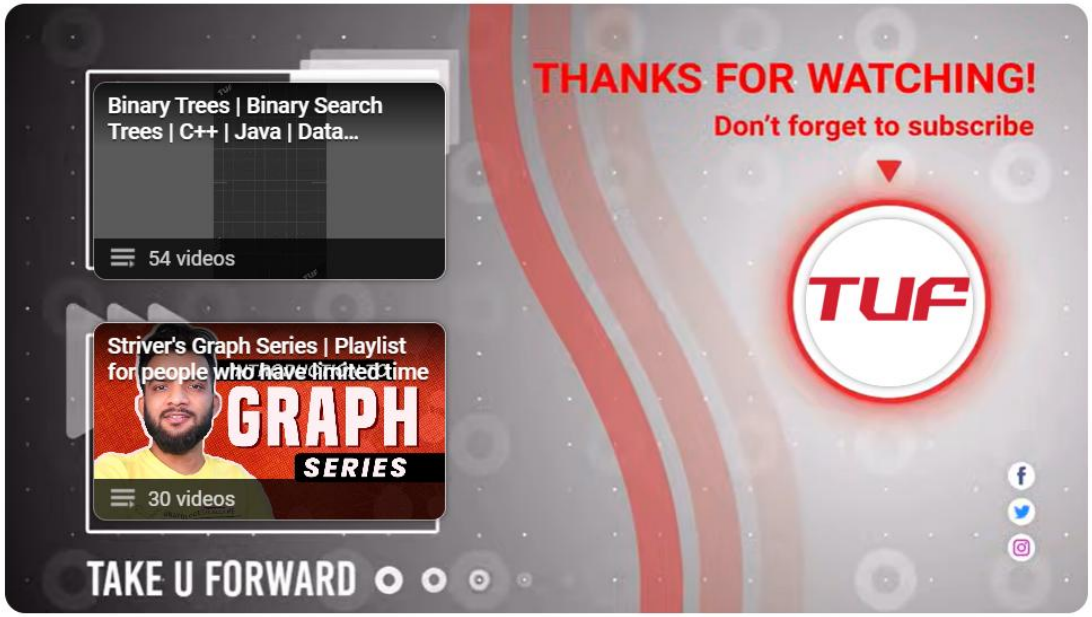
recursion striver

Sign in



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Recursion (Basics to Advanced) and ...

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18 L16. M-Coloring Problem | Backtracking — take U forward (24:37)

19 L17. Palindrome Partitioning | Leetcode | Recursion | C++ |... — take U forward (24:34)

20 L19. Rat in A Maze | Backtracking — take U forward (25:10)

21 L18. K-th Permutation Sequence | Leetcode

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ENG 10:20 20-01-2025