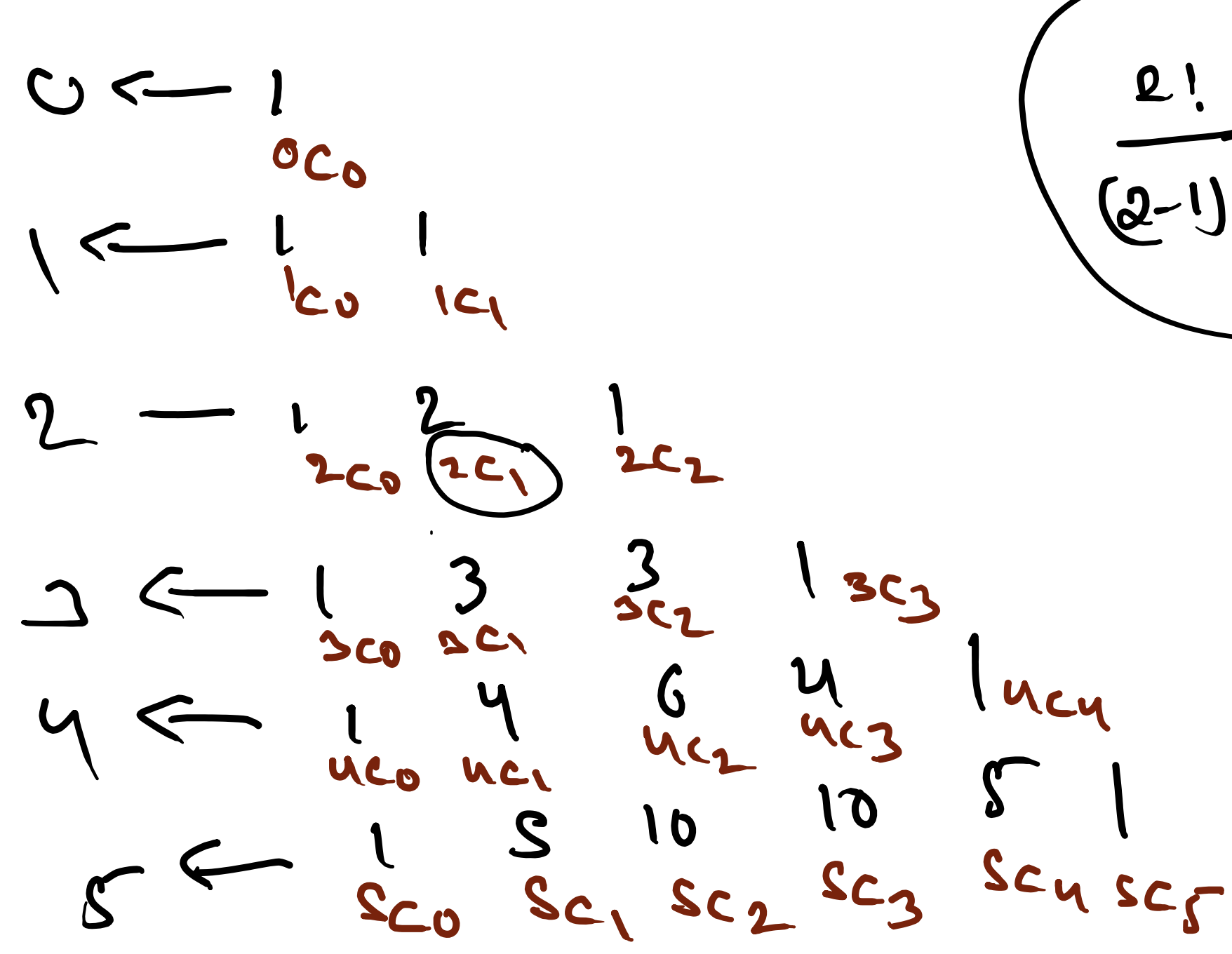


1! → power

$\frac{0!}{(0-0)!0!}$

$$NCR = \frac{N!}{(N-R)!R!}$$
$$NCR = \frac{N!}{(N+R)!R!}$$



$\frac{2!}{(2-1)!1!}$

$\frac{n!}{(n-r)!r!}$

$$\frac{NCR}{NCR+1} = \frac{N!}{(N-R)!R!} \div \frac{N!}{(N-(R+1))!(R+1)!}$$
$$\frac{NCR+1}{NCR} = \frac{(N-R) \times R!}{(R+1)R!}$$
$$\frac{NCR+1}{NCR} = \frac{(N-R)}{R+1}$$
$$NCR+1 = \left(\frac{N-R}{R+1} \right) NCR$$
$$NCR+1 = \left(\frac{200-i}{i+1} \right) NCR$$

Shopping Game

Faculty at CodingBlocks loves to purchase smartphones and decides to play a game. Aayush and Harshit decides to shop for smartphones. Aayush purchases 1 smartphone, then Harshit purchases 2 smartphones, then Aayush purchases 3 smartphones, then Harshit purchases 4 smartphones, and so on. Once someone can't purchase more smartphones, he loses.

Aayush can purchase at most M smartphones and Harshit can purchase at most N smartphones. Who will win ? Print "Aayush" and "Harshit" accordingly.

m = 12

a = 0

1 + 3 = 4

4 + 5 = 9

N = 11

H = 0

2 + 4 = 6

6 + 6 = 12

phone = 1 2 3 4 5 6

while (true) {

 a = a + phone

 if (a > m) {

 break

 }

 phone++

 H = H + phone

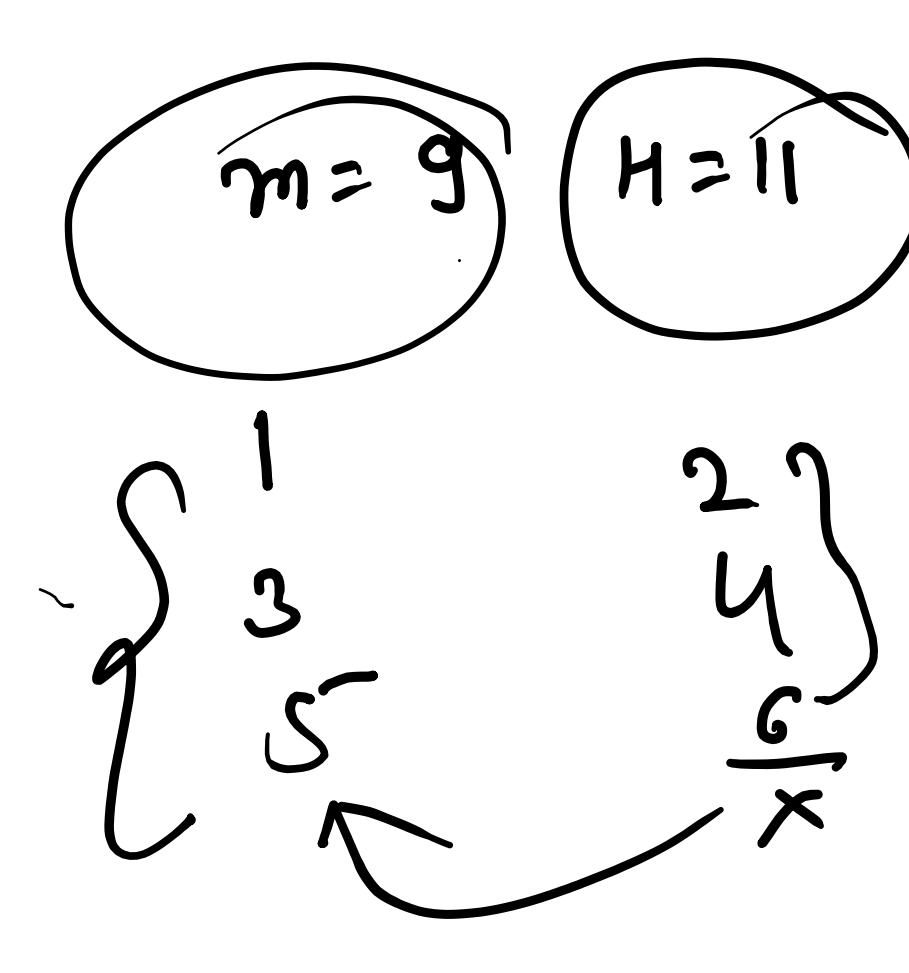
 if (H > N) {

 break

 }

 phone++

}



```
for (int i = 1; i <= n; i++) {
    System.out.println(i);
}
```

1 < 5

2 < 5

3 < 5

4 < 5

5 < 5

6 < 5

i = 2

i = 3

i = 4

i = 5

i = 6

```
public static void main(String[] args) {
    // TODO Auto-generated method stub
    int x = 5;
    System.out.println(x++);
    System.out.println(x);
    int p = x++ + ++x + x-- + --x + 7;
}
```

5 - 7 + 7 + 5 + 7 = 17

x = 5 6 7 6 5

1 2 3 4 5

7 / 13 = 0

18 % 4 = 2

18 / 4 = 4

7 % 13 = 7

- 7 % 13 =

- 7 + 13 = 6