

Combinations in C++	
<pre> #include <iostream> using namespace std; void combinations(int cb, int nboxes, int ssf, int ritems, string asf) { if (cb > nboxes) { if (ssf == ritems) { cout << asf << endl; } return; } combinations(cb + 1, nboxes, ssf + 1, ritems, asf + "i"); combinations(cb + 1, nboxes, ssf, ritems, asf + "-"); } int main() { int nboxes = 3; int ritems = 2; combinations(1, nboxes, 0, ritems, ""); return 0; } </pre>	<p>Dry Run for nboxes = 3 and ritems = 2</p> <p>Initial call: combinations(1, 3, 0, 2, "")</p> <p>Recursive Tree:</p> <ol style="list-style-type: none"> Box 1: Place "i" → combinations(2, 3, 1, 2, "i") <ul style="list-style-type: none"> Box 2: Place "i" → combinations(3, 3, 2, 2, "ii") <ul style="list-style-type: none"> Box 3: Leave "-" → Print: ii- Box 2: Leave "-" → combinations(3, 3, 1, 2, "i-") <ul style="list-style-type: none"> Box 3: Place "i" → Print: i-i Box 1: Leave "-" → combinations(2, 3, 0, 2, "-") <ul style="list-style-type: none"> Box 2: Place "i" → combinations(3, 3, 1, 2, "-i") <ul style="list-style-type: none"> Box 3: Place "i" → Print: -ii Box 2: Leave "-" → combinations(3, 3, 0, 2, "--") <ul style="list-style-type: none"> Box 3: Place "i" → Not valid (ssf = 1)
<p>Output:-</p> <p>ii- i-i -ii</p>	