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| **Combinations in C++** | |
| #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;  } | **Dry Run with Table for Input:**   * nboxes = 3 * ritems = 2   We're tracing the recursive calls:   * cb: current box index * ssf: selected so far * asf: answer so far  | **Step** | **cb** | **ssf** | **asf** | **Action** | | --- | --- | --- | --- | --- | | 1 | 1 | 0 | "" | → i at box 1 → recurse | | 2 | 2 | 1 | "i" | → i at box 2 → recurse | | 3 | 3 | 2 | "ii" | → i at box 3 → recurse | | 4 | 4 | 3 | "iii" | ✖ too many items (ssf > ritems) | | 5 | 3 | 2 | "ii" | → - at box 3 → ✅ print: ii- | | 6 | 2 | 1 | "i" | → - at box 2 → recurse | | 7 | 3 | 1 | "i-" | → i at box 3 → recurse | | 8 | 4 | 2 | "i-i" | ✅ valid → print: i-i | | 9 | 3 | 1 | "i-" | → - at box 3 → recurse | | 10 | 4 | 1 | "i--" | ✖ too few items | | 11 | 1 | 0 | "" | → - at box 1 → recurse | | 12 | 2 | 0 | "-" | → i at box 2 → recurse | | 13 | 3 | 1 | "-i" | → i at box 3 → recurse | | 14 | 4 | 2 | "-ii" | ✅ valid → print: -ii | | 15 | 3 | 1 | "-i" | → - at box 3 → recurse | | 16 | 4 | 1 | "-i-" | ✖ too few items | | 17 | 2 | 0 | "-" | → - at box 2 → recurse | | 18 | 3 | 0 | "--" | → i at box 3 → recurse | | 19 | 4 | 1 | "--i" | ✖ too few items | | 20 | 3 | 0 | "--" | → - at box 3 → recurse | | 21 | 4 | 0 | "---" | ✖ too few items |   **✅ Final Output**  ii-  i-i  -ii |
| Output:-  ii-  i-i  -ii | |