

Is it?

```
void CPisFun() {  
    // Constraint Programming engine  
    Solver solver("CP is fun!");  
  
    const int64 kBase = 10;  
  
    // Decision variables  
    IntVar* const c = solver.MakeIntVar(1, kBase - 1, "C");  
    ...  
    IntVar* const e = solver.MakeIntVar(0, kBase - 1, "E");  
  
    // We need to group variables in a vector to be able to use  
    // the global constraint AllDifferent  
    std::vector<IntVar*> letters;  
    letters.push_back(c);  
    ...  
    letters.push_back(e);  
  
    // Check if we have enough digits  
    CHECK_GE(kBase, letters.size());  
  
    // Constraints  
    solver.AddConstraint(solver.MakeAllDifferent(letters));  
  
    // CP + IS + FUN = TRUE  
    IntVar* const term1 = MakeBaseLine2(&solver, c, p, kBase);  
    IntVar* const term2 = MakeBaseLine2(&solver, i, s, kBase);  
    IntVar* const term3 = MakeBaseLine3(&solver, f, u, n, kBase);  
    IntVar* const sum_terms = solver.MakeSum(solver.MakeSum(term1,  
                                                             term2),  
                                              term3)->Var();  
  
    IntVar* const sum = MakeBaseLine4(&solver, t, r, u, e, kBase);  
  
    solver.AddConstraint(solver.MakeEquality(sum_terms, sum));  
  
    // Decision Builder: how to scour the search tree  
    DecisionBuilder* const db = solver.MakePhase(letters,  
                                                  Solver::CHOOSE_FIRST_UNBOUND,  
                                                  Solver::ASSIGN_MIN_VALUE);  
}
```

CP Solver

Assert-like macro

Decision builder

Variables

Constraints

Search tree