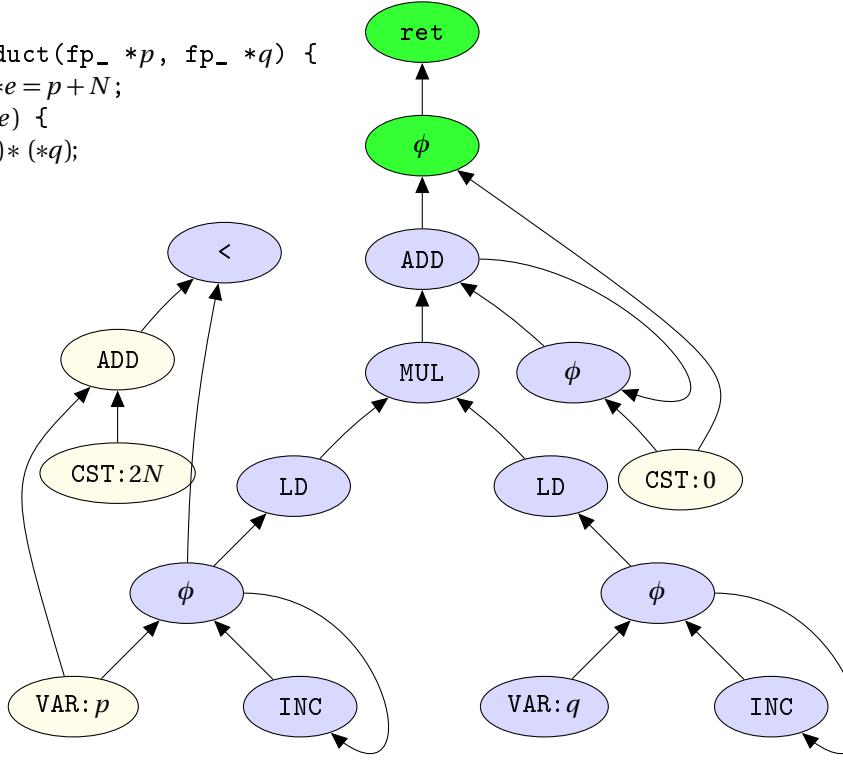```
fp_ dot_product(fp_ *p, fp_ *q) {
  fp_ s = 0, *e = p + N;
  while (p < e) {
    s = s + (*p) * (*q);
    p = p + 1;
    q = q + 1;
  }
  return s;
}
```