|  |  |
| --- | --- |
| **define:** HandleInstForExtraction(*inst*, *alias\_graph*, *lock\_set*, *key\_fields*) | |
| 1:  2:  3:  4:  5:  6:  7:  8:  9:  10:  11:  12:  13:  14: | *alias\_graph* := UpdateAliasGraph(*alias\_graph*, *inst*);  *lock\_set* := UpdateLockSet(*inst*, *lock\_set*, *alias\_graph*);  **if** *inst* is a write or read operation **then**  *var* := GetOperand(*inst*);  *var\_node* := GetAliasNode(*var*, *alias\_graph*);  **foreach** *lock\_node* in *lock\_set* **do**  <*var\_field*, *lock\_field*> := GetProtectedFieldAccess(  *var\_node*, *lock\_node*, *alias\_graph*);  **if** *var\_field* is not NULL **then**  insert *var\_field* into *key\_fields*;  **end if**  **end foreach**  **end if**  **return** < *alias\_graph*, *lock\_set*, *key\_fields*>; |

|  |  |
| --- | --- |
| **define:** ExtractKeyField () | |
| 15:  16:  17:  18:  19:  20:  21:  22:  23:  24:  25:  26:  27: | *key\_fields* := ;  **foreach** *func* in OS code without a caller function **do**  **foreach** *code\_path* in GetCodePath(*func*) **do**  *alias\_graph* := ;  *lock\_set* := ;  **foreach** *inst* in GetInstructions(*code\_path*) **do**  < *alias\_graph*, *lock\_set*, *key\_fields*> :=  HandleInstForExtraction(  *inst*, *alias\_graph*, *lock\_set*, *key\_fields*);  **end foreach**  **end foreach**  **end foreach**  **return** *key\_fields*; |