$_{d}efinitive_{2}013(ANotherToolforLanguageRecognition)ANTLRv4ANLTRC/C+$
$+, IslandGrammargotocontinuebreakifswitchforwhiledo-$
$whilemoonen_{g}enerating_{2}001$
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$_{d}ef|simple_{d}ecl|using_{d}irective|water)*; using_{d}irective :$
$USINGNAMESPACEidentifier';' ; simple_{d}ecl :$
$(TYPEDEF?template_{d}ecl_{s}tart?)var_{d}ecl; ...water :$
$any_{t}oken$
$_{d}ef :$
$template_{d}eclStart?return_{t}ype?function_{n}amefunction_{p}aramListctorList?compound_{s}tatement; template_{d}ecl_{s}tart :$
$TEMPLATE' <'$
$template_{p}aram_{l}ist' >'$
$; ...returnType :$
$(functionDeclSpecifiers*$
$typeName)ptrOperator*; ...function_{p}aram_{l}ist :'$
$('parameter_{d}ecl_{c}lause?')'CV_{Q}UALIFIER*$
$exception_{s}pecification?; parameter_{d}ecl_{c}lause :$
$(parameter_{d}ecl(',' parameter_{d}ecl)*)(',''...')?|VOID; parameter_{d}ecl :$
$param_{d}ecl_{s}pecifiersparameter_{i}d; ...function_{n}ame :'$
$('function_{n}ame')'|identifier|OPERATORoperator; ...compound_{s}tatement :$
$opening_{c}urly(statements)closing_{c}urly; ...$
$_{o}pener|pre_{c}loser|pre_{e}lse|statement)*; statement :$
$opening_{c}urly|closing_{c}urly|block_{s}tarter|jump_{s}tatement|label|simple_{d}ecl|expr_{s}tatement|water; ...expr_{s}tatement :$
$expr?';' ; expr :$
$assign_{e}xpr(',' expr)?; assign_{e}xpr :$
$conditional_{e}xpression(assignment_{o}peratorassign_{e}xpr)?; conditional_{e}xpression :$
$or_{e}xpression|or_{e}xpression('?'expr' :'$
$conditional_{e}xpression)or_{e}xpression :$
$and_{e}xpression('||'or_{e}xpression)?; and_{e}xpression :$
$inclusive_{o}r_{e}xpression(''and_{e}xpression)?; ...$
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$_{f}un(y);$
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$_{p}rogram_{1}987weiser_{p}rogram_{1}981$
$susedefinesvsvssvsvvssusedefineuse(s) =$
$\{v|vs\}define(s) =$
$\{v|vs\}suse(s)s$
??
????
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??
$_{m}odeling_{2}014yamaguchi_{a}utomatic_{2}015Neo4jTitanOrientDBPropertyGraphPG$
$G =$
$(V, E)VE \subseteq$
$(V \times$
$V)$??
$G =$
$(V, E, \lambda, \mu, s, d)VEs :$
$E \overrightarrow{}$
$Vd :$
$E \overrightarrow{}$
$V\lambda :$
$E \Rightarrow$
$\sum\sum\mu :$
$(V \cup$
$E) \times$
$K \overrightarrow{}$
SKS
$G_A =$
$(V_A, E_A, \lambda_A, \mu_A, s_A, d_A)V_AE_A\lambda_As_Ad_A$
$typecodechildnumoperatorlocation)fileisCFGNode$??
??
$G_C =$
$(V_C, E_C, \lambda_C, \mu_C, s_C, d_C)V_C =$
$\{v|v \in$
$V_A \cup$
$\{ENTRY, EXIT\}, \mu_C(v, type) =$
$StmtC\}ENTRYEXITE_C\lambda_C$
$\sum_C =$
$\{true, false, \epsilon\}truefalseConditione\epsilon$
??
??$ENTRYisCFGNode{=}True$
$G_D =$
$(V_D, E_D, \lambda_D, \mu_D, s_D, d_D)V_D \subseteq$
$V_C \subseteq$
$V_AE_D\lambda_D :$
$E_D \overrightarrow{}$
$\sum_D\sum_D =$