## Main Method

<Main> Main{ <Main-Body> } <Main-Foll>

<Main-Body> <M-st> | ϵ

< Main-Foll > < class> <Main-Foll> | ϵ

## Class

<Class> Class ID { < class body > }

<class body> ϵ| < Datatype\_identifier > |< Fn-Def>

# Variables

<Datatype\_identifier> DT ID <options> | ID <options>

<Identifer> ID <options>

< options > <Dec-Assgn>|< Array >

# Declaration and assignment

<Dec-Assgn> < Init > < List >

<Init> ϵ | = < Init1 >

<Init1> ID < Init > | < Const >

<List> ;| , < ID > < Init > < List >

# Array

< Array > [ < size > ] <detail> ;

< size > <OE> | ϵ

< Detail > = {<F> <ID-const-More> } | ϵ

< ID-const-More > ϵ |,<F> <ID-const-More>

# Expression

<OE> < AE > < OE’ >

<OE’> || < AE > < OE’ > | ϵ

<AE> < RE > < AE’ >

<AE’> && < RE > < AE > | ϵ

<RE> < E > < RE’ >

<RE’> < Ro > < E > < RE’ > | ϵ

<E> < T > < E’ >

<E’> < P-M > < T > < E’ > | ϵ

<T> < F > < T’ >

<T’> < M-D-M > < F > < T’ > | ϵ

<F> ID | < Const >

# Repeat

<Repeat> Repeat ( < Datatype\_identiifer > ; ID <RO>< OE> ; < F1 > ) { < M-ST> }

<F1> ID <F2> | <INC\_DEC> ID | ϵ

<F2> <assg\_opper> <OE>| <INC\_DEC>

# Repeat While

<Repeat-While> Repeat-While ( <OE> ) { < M-ST> }

# Either Or

<Either-Or> Either ( < OE> ) { < M-St > } < O-Or>

< O-Or> ϵ| Or { < M-ST > }

# Function Definition

< Fn-Def> Define ID ( < FN\_ Def \_parameter > ) { <Fn\_body > }

< FN\_ Def \_parameter> DT ID < Fn\_INIT> < FN\_ Def \_parameter 1>

< FN\_ Def \_parameter1> ,DT ID < Fn\_INIT> < FN\_ Def \_parameter 1>

< FN\_ Def \_parameter> ϵ

< FN\_ Def \_parameter1> ϵ

< Fn\_INIT> =<OE> | ϵ

< Fn\_body> < M-ST><Fn-Return> | ϵ

< Fn-return > return < OE>;| ϵ

# Function Calling

< Fn-Call> ID (< FN\_call\_parameter >) ;

< FN\_call\_parameter> <DT > ID < Fn\_INIT> < FN\_call\_parameter 1>

< FN\_call\_parameter> ID < Fn\_INIT> < FN\_call\_parameter1 >

< FN\_call\_parameter> ϵ

< FN\_call\_parameter1> , < FN\_call\_parameter2>

< FN\_call\_parameter1> ϵ

< FN\_call\_parameter2> <DT> ID < Fn\_INIT> < FN\_call\_parameter1 >

< FN\_call\_parameter2> ID < Fn\_INIT> < FN\_call\_parameter 1>

# Shift

< Shift> shift ( ID ) { < Bound> < Default >}

< Bound> bound < Const > : < < M-ST> > < Bound > | ϵ

<Default> Default : < M-ST > | ϵ

# Others

<M-ST> ϵ| < S-ST > < M-ST >

<S-ST> < Datatype\_identiifer > | < Repeat > | < Repeat-While > | < Either-Or > | < Shift > | < Define > |< Fn-Def > | < Fn-Call > | <Break>

<Const> String-Const | Integer-Const | double-Const | Char-Const