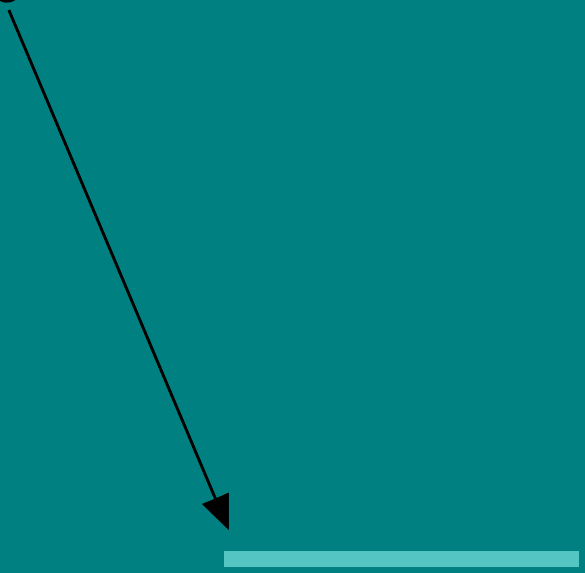
Semantic Stack

• if i = 1 -> write i; fi ;

<stmt> • if #startif <gcl> fi #endif ;

Stacktop

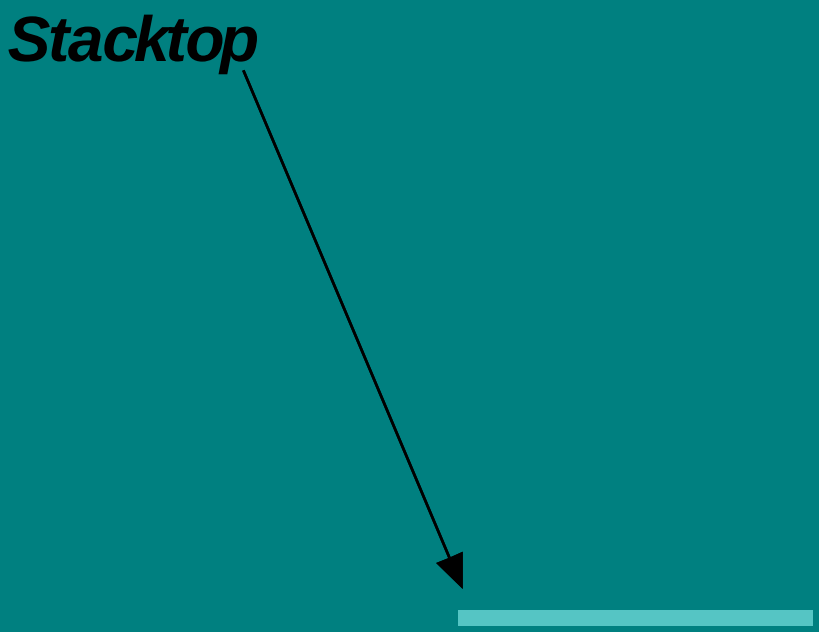


Not a truly valid gcl program

Semantic Stack

if • i = 1 -> write i; fi ;

<stmt> if • #startif <gcl> fi #endif ;

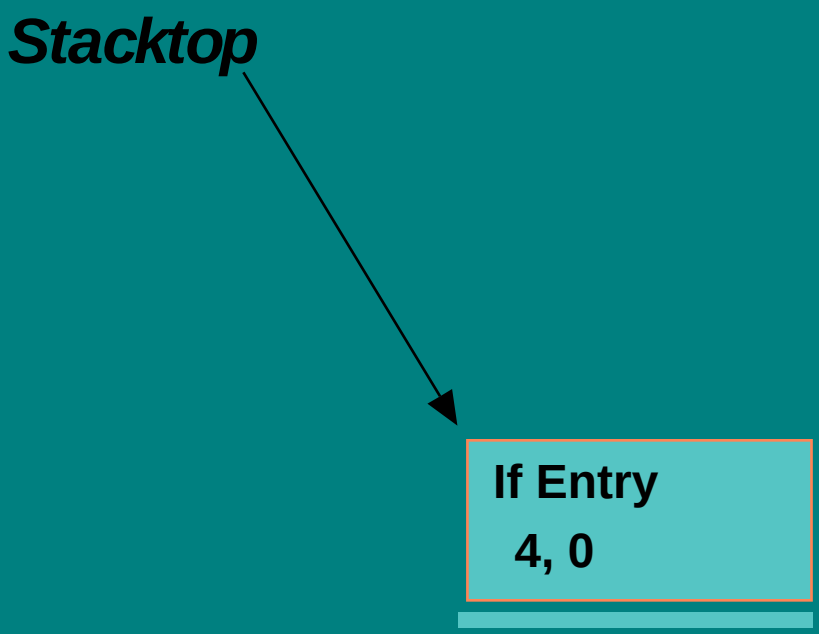


#startif

Semantic Stack

if • i = 1 -> write i; fi ;

<stmt> if #startif • <gcl> fi #endif ;

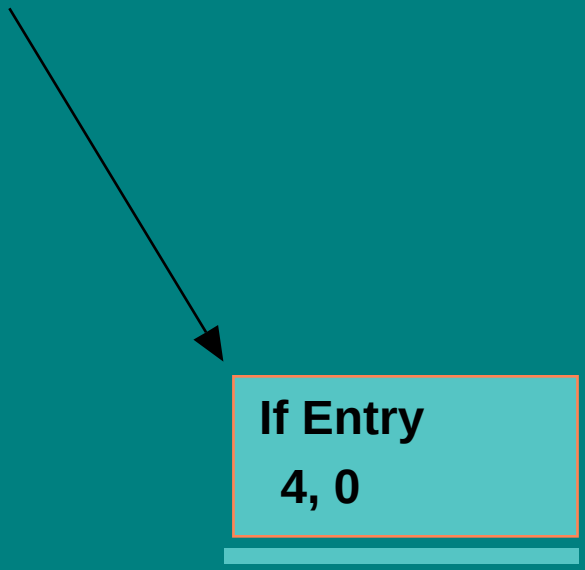


Semantic Stack

if • i = 1 -> write i; fi ;

<gcl> <gc> <gcm>
<gc> • <expr> #iftest -> <stmtpart> #elsif

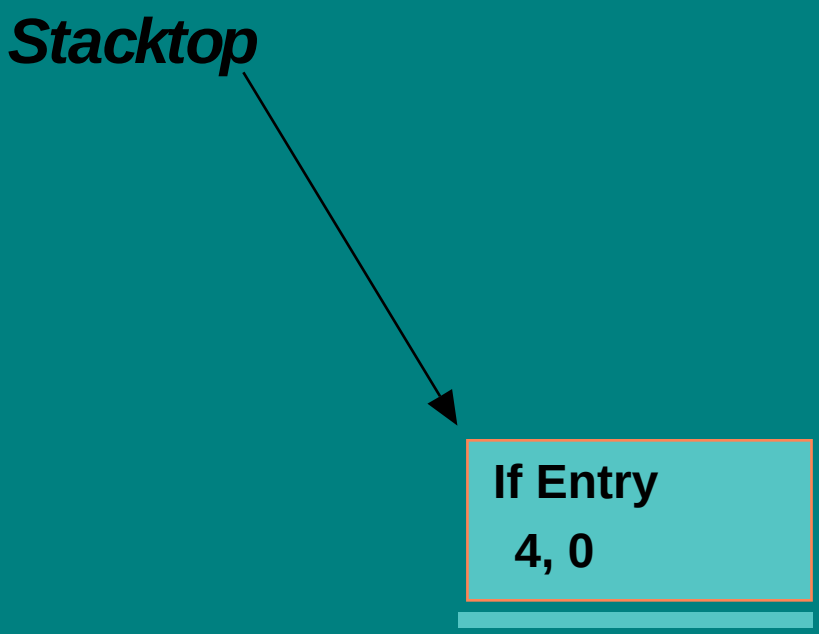
Stacktop



Semantic Stack

if • i = 1 -> write i; fi ;

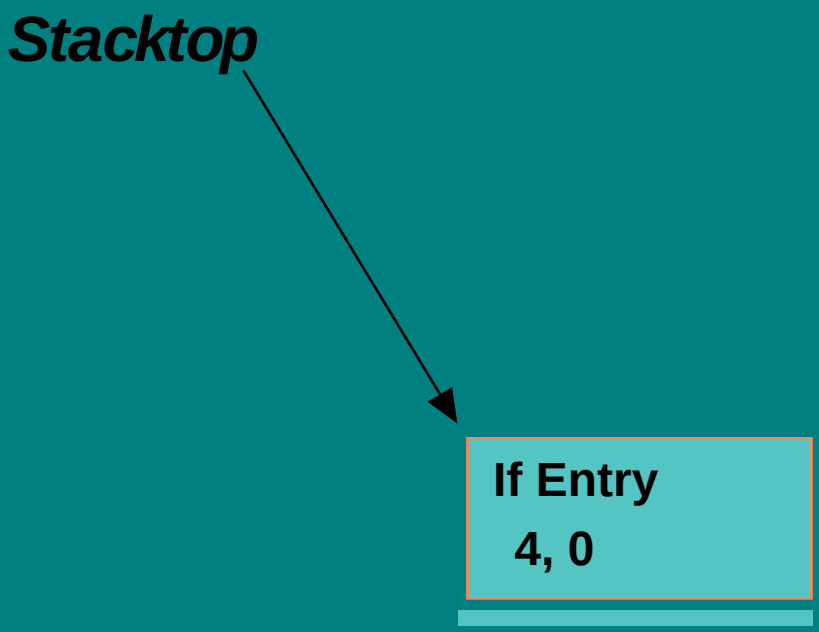
<expr> • <relexpr> <relop>#push <relexpr> #compExpr



Semantic Stack

if • i = 1 -> write i; fi ;

<relexpr> • “identifier” #push #transformsid

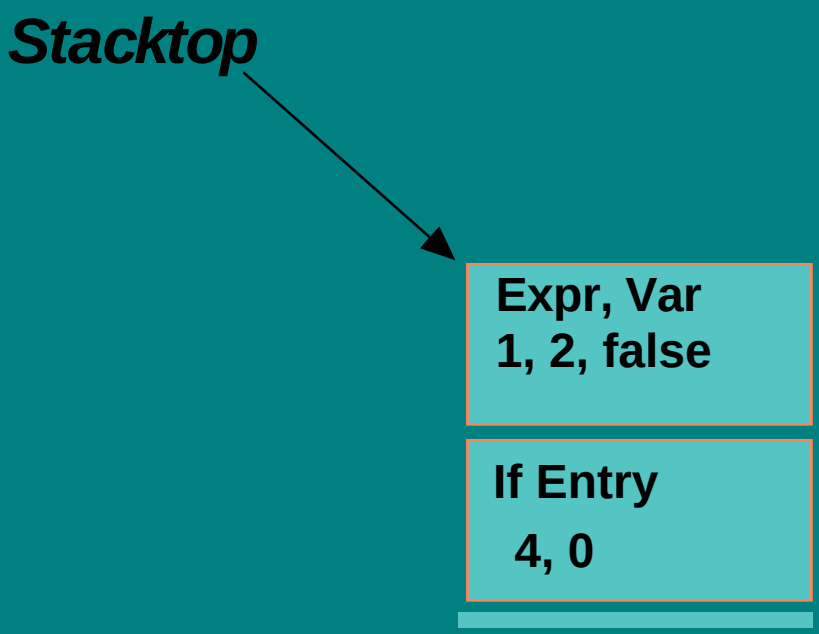


#push #transformid

Semantic Stack

if i • = 1 -> write i; fi ;

<relexpr> “identifier” #push #transformid •

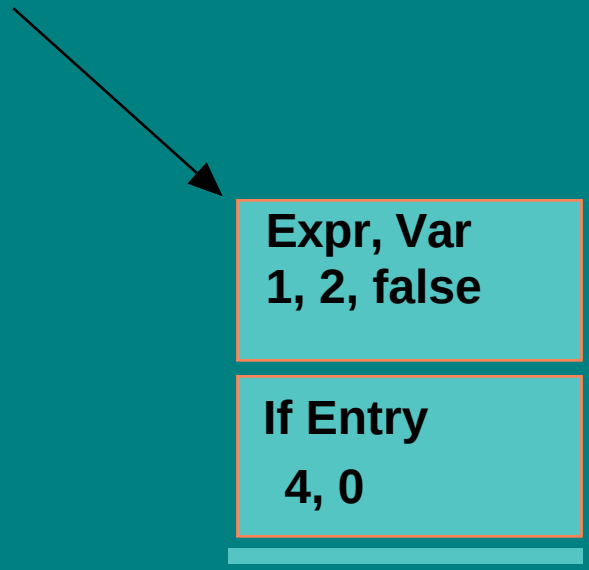


Semantic Stack

if i • = 1 -> write i; fi ;

<expr> <relexpr> • <relop> #push <relexpr> #compExpr

Stacktop

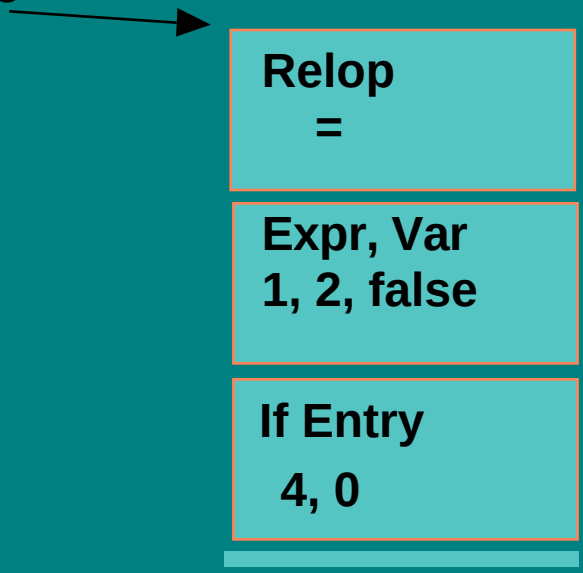


Semantic Stack

if i = • 1 -> write i; fi ;

<expr> <relexpr> <relop> #push • <relexpr> #compExpr

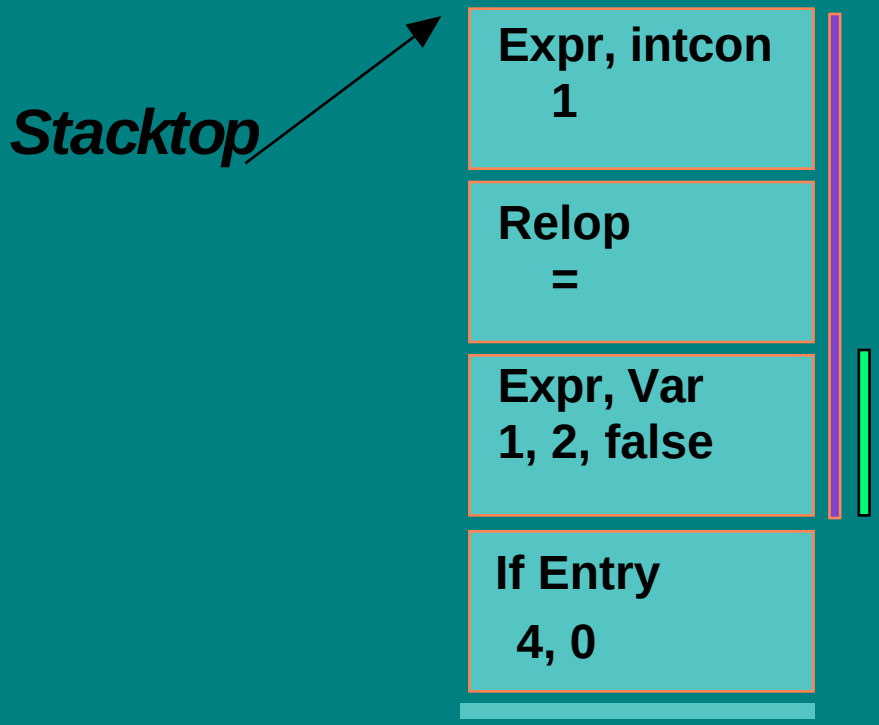
Stacktop



Semantic Stack

if i = 1 • -> write i; fi ;

<expr> <relexpr> <relop> #push <relexpr> • #compExpr

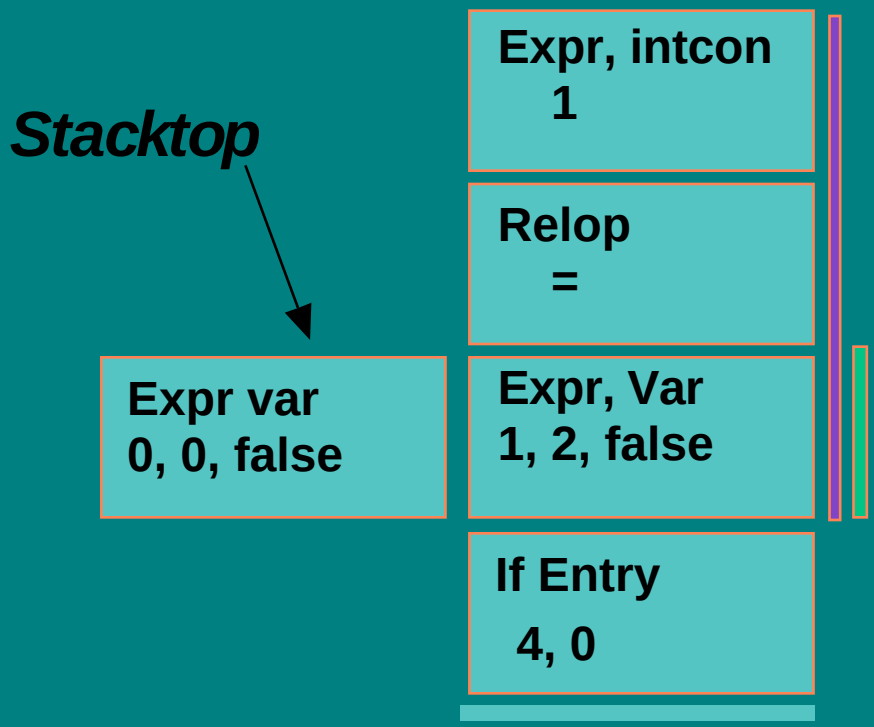


#compExpr

Semantic Stack

if i = 1 • -> write i; fi ;

<expr> <relexpr> <relop> #push • <relexpr> #compExpr




```
LD  R1,  +2(R15)
LD  R0,  #1
IC  R1,  +0(R14)
JEQ  &4
LD  R0,  #0
```


IN #compExpr

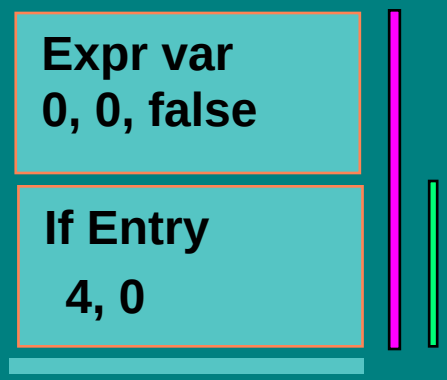
Semantic Stack

if i = 1 • -> write i; fi ;

<gcl> <gc> <gcm>
<gc> <expr> • #iftest -> <stmtpart> #elsif

```
LD  R1,  +2(R15)
LD  R0,  #1
IC  R1,  +0(R14)
JEQ  &4
LD  R0,  #0
```

Stacktop

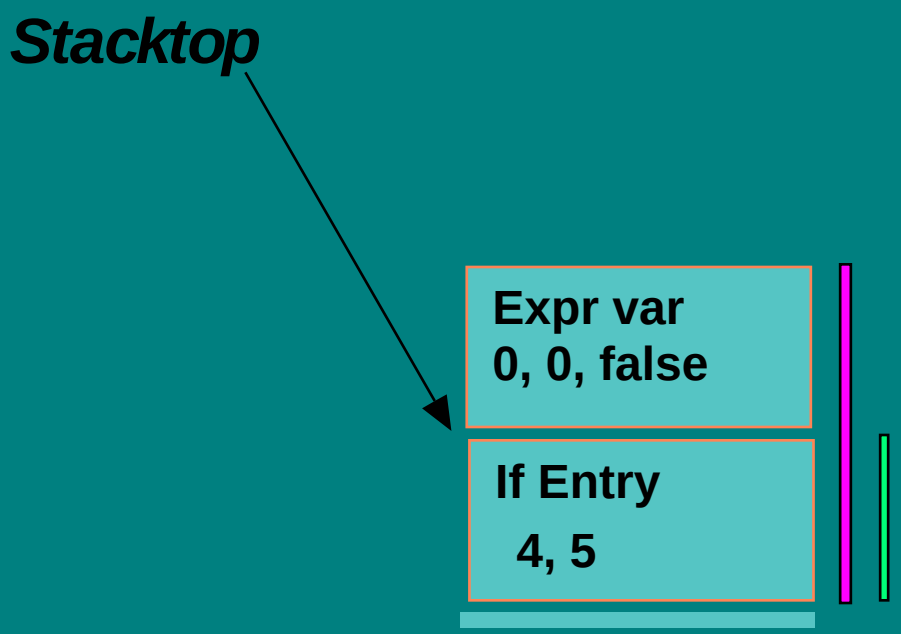


#iftest

Semantic Stack

if i = 1 • -> write i; fi ;

<gcl> <gc> <gcm>
<gc> <expr> • #iftest -> <stmtpart> #elsif



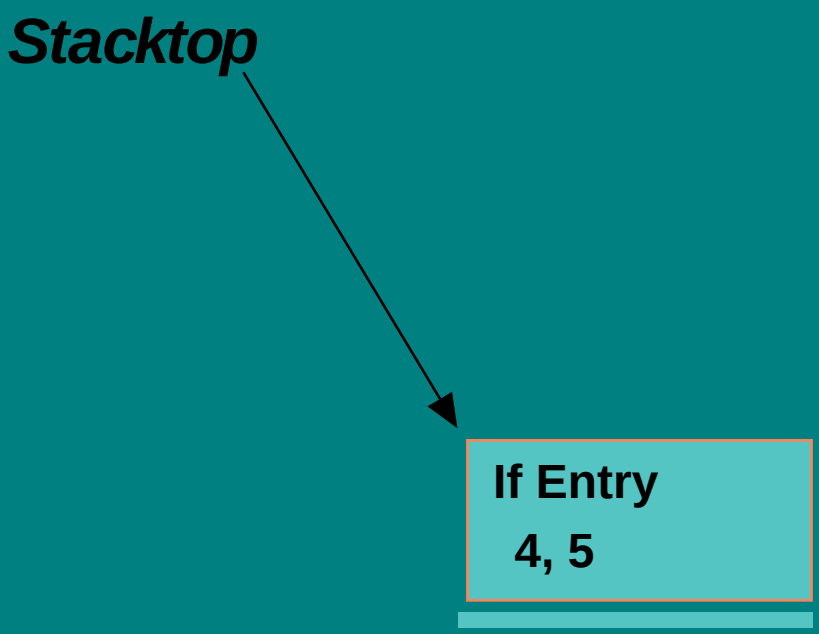

```
LD  R1,  +2(R15)
LD  R0,  #1
IC  R1,  +0(R14)
JEQ  &4
LD  R0,  #0
IC  R0, #1
JNE  J5
```


IN #iftest

Semantic Stack

if i = 1 • -> write i; fi ;

<gcl> <gc> <gcm>
<gc> <expr> #iftest • -> <stmtpart> #elsif

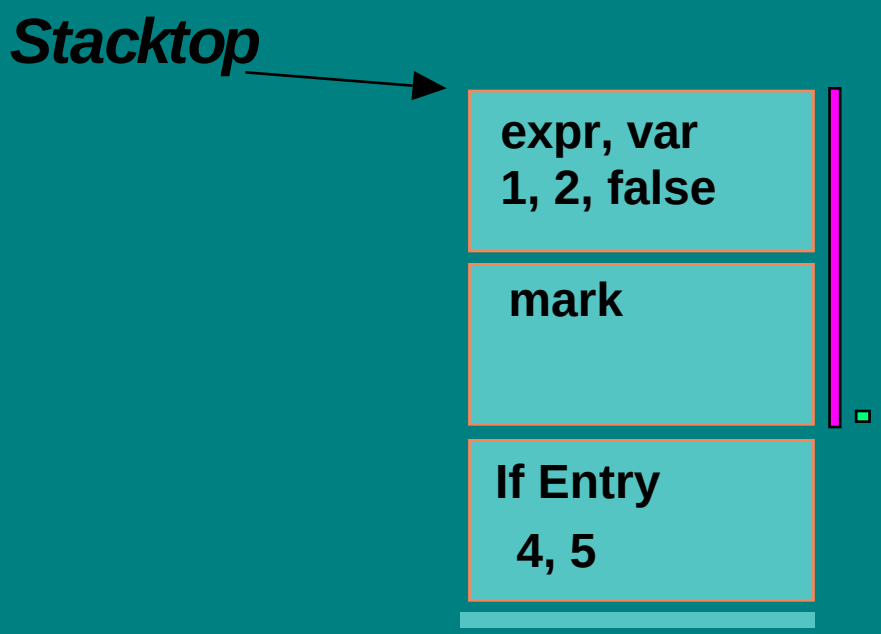



```
LD  R1,  +2(R15)
LD  R0,  #1
IC  R1,  +0(R14)
JEQ  &4
LD  R0,  #0
IC  R0, #1
JNE  J5
```

Semantic Stack

if i = 1 -> write i • ; fi ;

<stmt> write #mark <exprlist> • #writeItems



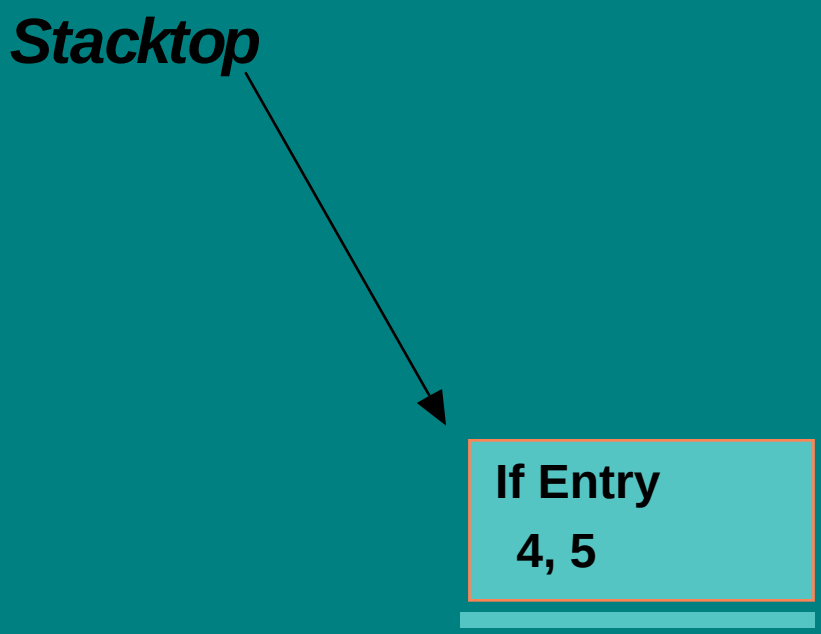

```
LD  R1,  +2(R15)
LD  R0,  #1
IC  R1,  +0(R14)
JEQ  &4
LD  R0,  #0
IC  R0, #1
JNE  J5
```

#writeItems

Semantic Stack

if i = 1 -> write i • ; fi ;

<stmt> write #mark <exprlist> #writeItems •

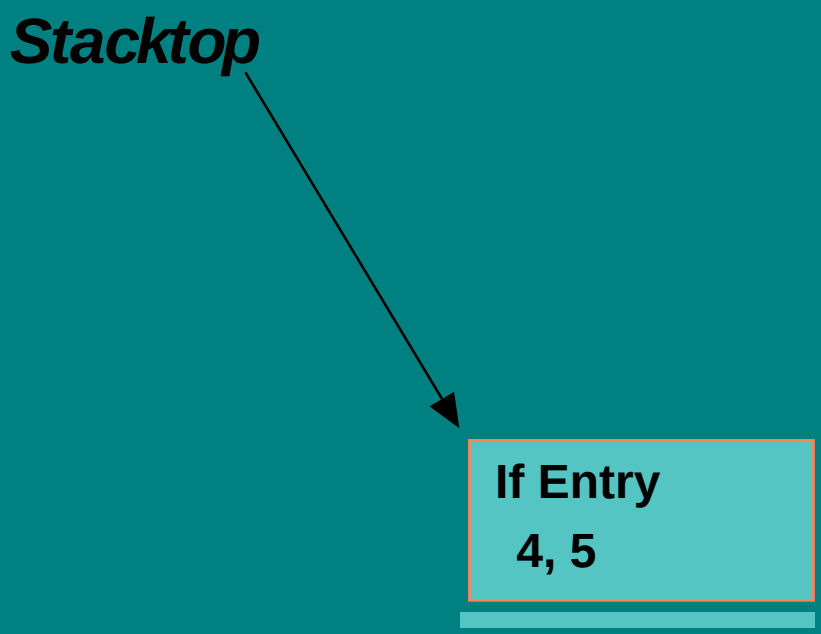



```
LD  R1,  +2(R15)
LD  R0,  #1
IC  R1,  +0(R14)
JEQ  &4
LD  R0,  #0
IC  R0, #1
JNE  J5
WRI  +2(R15)
```

Semantic Stack

if i = 1 -> write i; • fi ;

<gcl> <gc> <gcm>
<gc> <expr> #iftest -> <stmtpart> • #elsif




```
LD  R1,  +2(R15)
LD  R0,  #1
IC  R1,  +0(R14)
JEQ  &4
LD  R0,  #0
IC  R0, #1
JNE  J5
WRI  +2(R15)
```

Semantic Stack

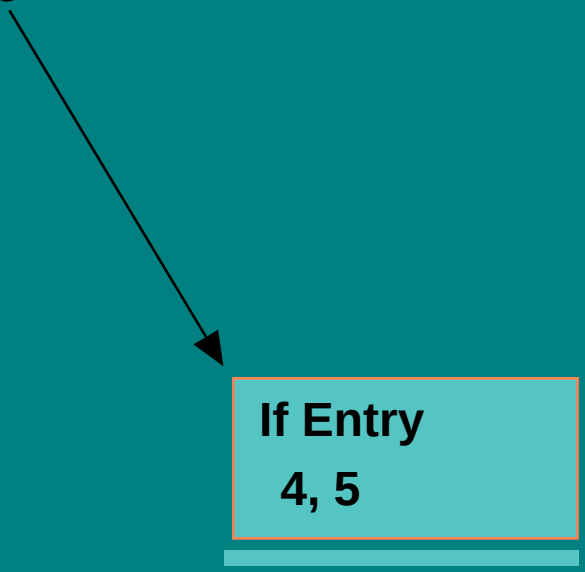
if i = 1 -> write i; • fi ;

<gcl> <gc> <gcm>

<gc> <expr> #iftest -> <stmtpart> • #elsif

```
LD  R1,  +2(R15)
LD  R0,  #1
IC  R1,  +0(R14)
JEQ  &4
LD  R0,  #0
IC  R0, #1
JNE  J5
WRI  +2(R15)
JMP  J4
LABEL  J5
```

Stacktop

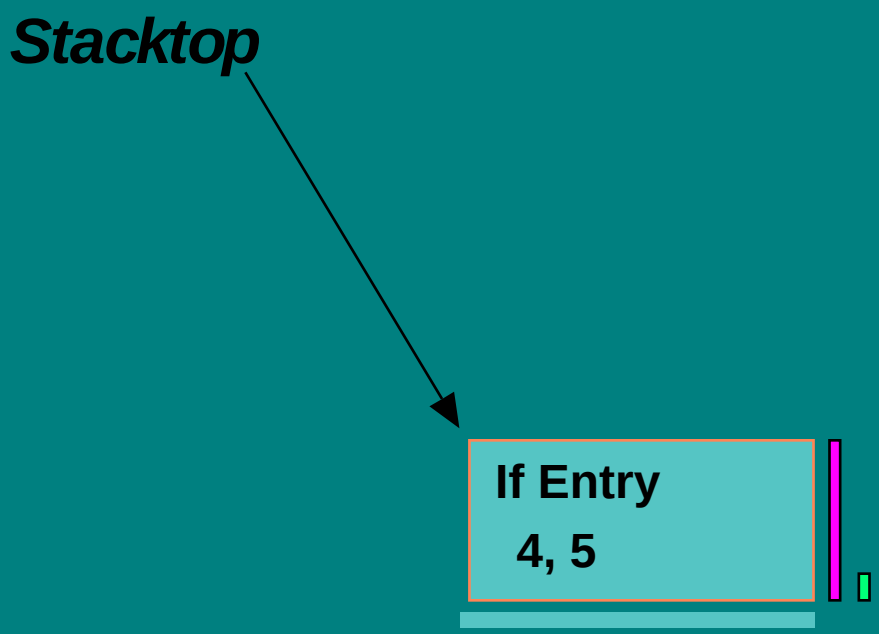


IN #elsif

Semantic Stack

if i = 1 -> write i; fi • ;

<stmt> if #startif <gcl> fi • #endif ;



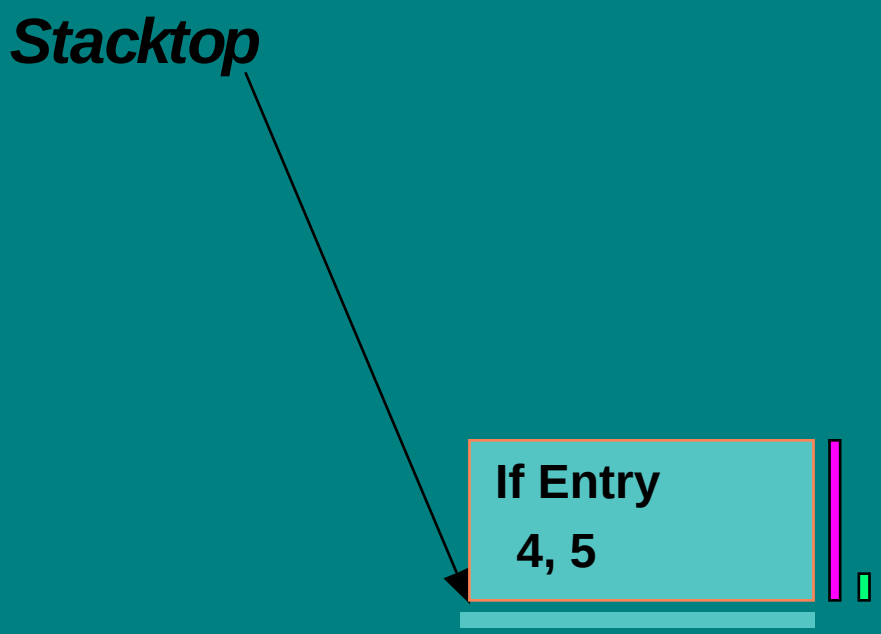

```
LD  R1,  +2(R15)
LD  R0,  #1
IC  R1,  +0(R14)
JEQ  &4
LD  R0,  #0
IC  R0, #1
JNE  J5
WRI  +2(R15)
JMP  J4
LABEL  J5
```


#endif

Semantic Stack

if i = 1 -> write i; fi • ;

<stmt> if #startif <gcl> fi • #endif ;



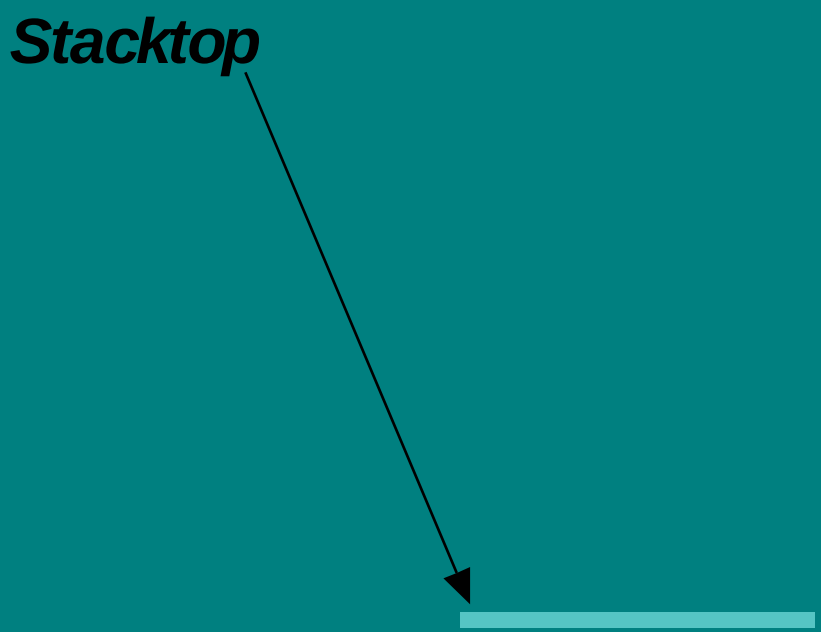

```
LD  R1,  +2(R15)
LD  R0,  #1
IC  R1,  +0(R14)
JEQ  &4
LD  R0,  #0
IC  R0, #1
JNE  J5
WRI  +2(R15)
JMP  J4
LABEL  J5
HALT
LABEL  J4
```


IN #endif

Semantic Stack

if i = 1 -> write i; fi ; •

<stmt> if #startif <gcl> fi #endif ; •




```
  LD  R1,  +2(R15)
  LD  R0,  #1
  IC   R1,  +0(R14)
  JEQ   &4
  LD  R0,  #0
  IC   R0, #1
  JNE  J5
  WRI  +2(R15)
  JMP  J4
LABEL   J5
  HALT
LABEL   J4
```