1.1

/\* for this code I used java \*/

A. a lexical error: int 9values = 88; The token 9values would throw an error

B. a syntax error: if(year%4 == 0) int I = 0; this is a syntax error because you declare the same named variable in the same scope

C. To my knowledge a static semantic error is when the identifiers, statements and expressions in a program are wrong: int i= “hello”; would be one of these errors

D. A dynamic semantic error would be when the instance of a value or location is wrong: int i; would be one of these errors.

E. The instance of this type of error which I used was calling main from main in java:

**public** **class** hw {

**public** **static** **void** main(String[] args) {

*main*(args);

}

}

This continued forever until a stack overflow occurred.

1.8

This works very well if there are any changes done to the functionality of the code within B, as given by the example. This does lead to extra work when the only changes preformed to B are in comments and naming conventions, but the functionality remains unchanged. Theoretically if a file which file B depends on changes then it would be recompiled without the file itself being changed cause A to need to be recompiled yet not be as nothing was changed.

2.1

A. String = “ ^( “ | /n | / ) “ = A string cannot have “,/n, or / unless escaped

B. Comments = (\* ^( (\*| { | } | \*) ) \*) | { ^( (\* | } | { | \*) )

C. Numeric Constants

* Octal = 0 (0|1|2|3|4|5|6|7)( 0|1|2|3|4|5|6|7)( 0|1|2|3|4|5|6|7)
* Hexadecimal = 0x | 0X ( |+|-) (0|1|2|3|4|5|6|7|8|9|a|b|…|f|A|B|…|F)\*16 (U|u|L|l|LL|ll) = has 16 total digits or letters
* Decimal =( |+|-) (1|2|3|4|5|6|7|8|9) . (0|1|2|3|4|5|6|7|8|9)\* (U|u|L|l|LL|ll)
* Decimal Floating Point = (0|1|2|3|4|5|6|7|8|9) (.|e|E) (0|1|2|3|4|5|6|7|8|9) (f|F|l|L)
* Hexadecimal floating point = (0x|0X) (0|1|2|3|4|5|6|7|8|9|a|b|…|f|A|B|…|F) . (0|1|2|3|4|5|6|7|8|9|a|b|…|f|A|B|…|F) (p|P) (0|1|2|3|4|5|6|7|8|9|a|b|…|f|A|B|…|F)

D. Floating-point Ada = (0|1|2|3|4|5|6|7|8|9|a|b|…|f|A|B|…|F|#) . (0|1|2|3|4|5|6|7|8|9|a|b|…|f|A|B|…|F|#)

E. Inexact Constants Scheme = (. (0|1|2|3|4|5|6|7|8|9)\* #\*) | ((0|1|2|3|4|5|6|7|8|9)\* . (0|1|2|3|4|5|6|7|8|9)\* #\*)

F. American Money = $ (\*)\* ((0|1|2|3|4|5|6|7|8|9), (0|1|2|3|4|5|6|7|8|9) (0|1|2|3|4|5|6|7|8|9) (0|1|2|3|4|5|6|7|8|9))\*| (0|1|2|3|4|5|6|7|8|9) . (0|1|2|3|4|5|6|7|8|9) (0|1|2|3|4|5|6|7|8|9)

2.13

See the images that I also submitted.

2.17

stmt 🡪 **if** expr **then** stmt\_list **fi**

stmt 🡪 **while** expr **do** stmt\_list **do**

expr 🡪 term boolean.op term

boolean\_op 🡪 <

boolean\_op 🡪 <=

boolean\_op 🡪 >=

boolean\_op 🡪 >

boolean\_op 🡪 ==

boolean\_op 🡪 !=