COMPILER FOR PROGRAMMING LANGUAGE- ORANGE
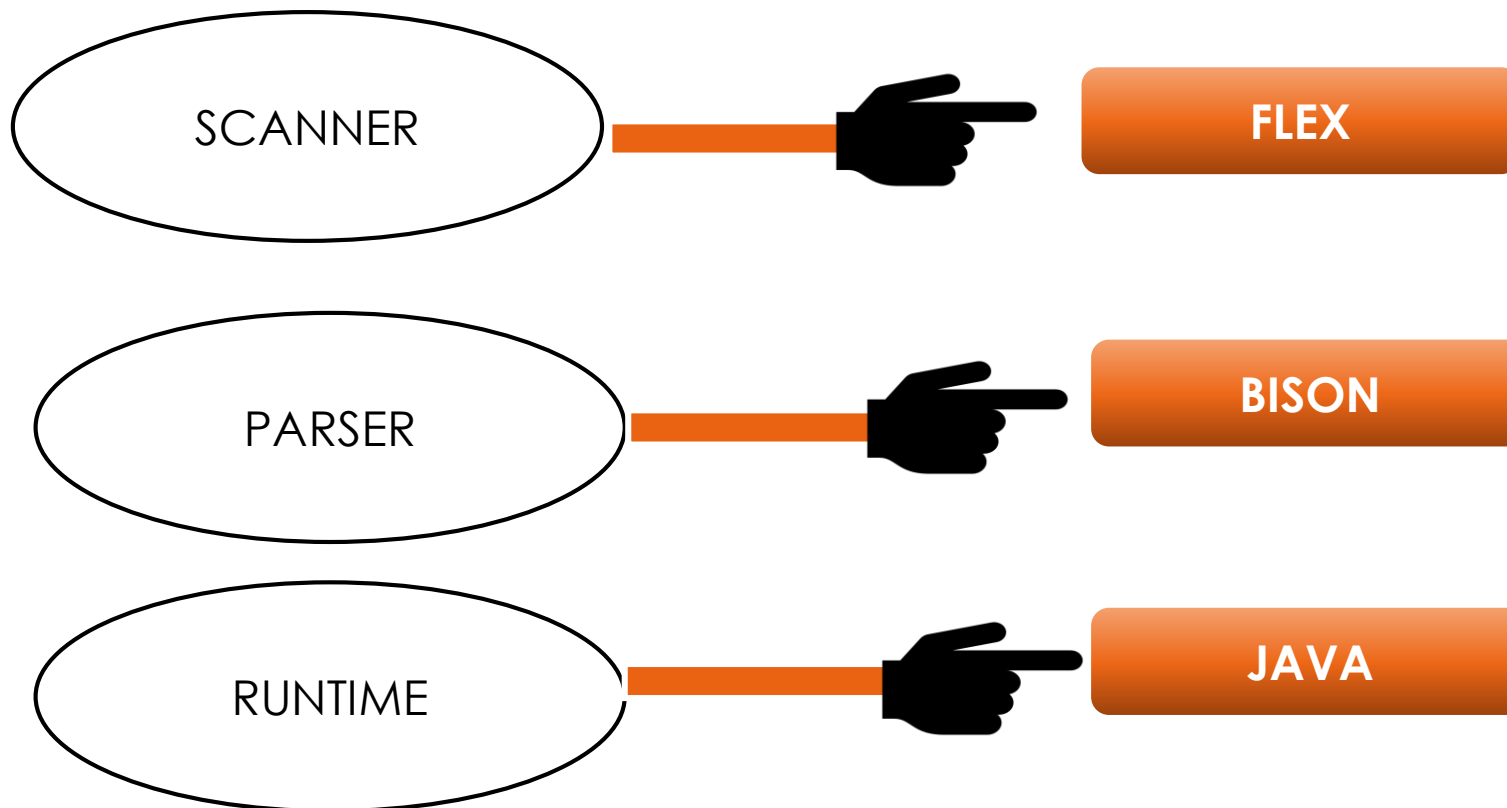
TEAM – 23
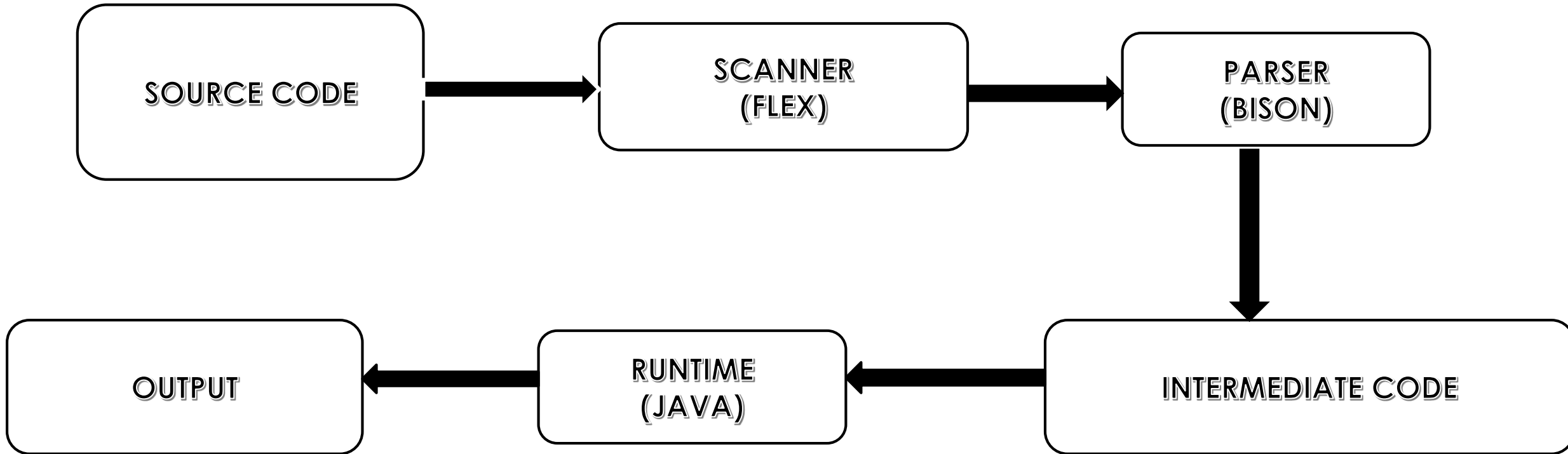
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UNDER THE GUIDANCE OF
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TOOLS USED

SCANNER $\longrightarrow$ FLEX

PARSER $\longrightarrow$ BISON

RUNTIME $\longrightarrow$ JAVA

COMPILER – DESIGN FLOW

OPERATORS	DESCRIPTION
"+"	Addition
"-"	Subtraction
"*"	Multiplication
"/"	Division
"&"	AND
"|"	OR
"!"	NOT
"="	Assignment operator
"~"	delimiter
"=="	Comparison operator
">"	Greater than
"<"	Lesser than
"T"	True
"F"	False
"("	Left parentheses
")"	Right parentheses
"{"	Block begin
"}"	Block end

KEYWORDS

num	Number(int/float)
read	Input
write	output
nl	New line
is	if
isnot	else
loop	While loop

Command 1	bison –dy ORJ.y

- To generate the parser which generates y.tab.c and y.tab.h files

Command 2	flex ORJ.l

- This is the scanner which in turn generates lex.yy.c

Command 3	gcc –o xyz.orj lex.yy.c y.tab.c -lm

- This generates xyz.orj file which helps to generate an intermediate code for the program

Command 4	xyz.orj test.orj

- To generate an intermediate code by making use of xyz.orj file which has an extension ".int"

Command 5	javac Runtime.java

- To run the java file which generates a class file to execute the program.

Command 6	java Runtime test.orj.int

- To run/execute the program(Intermediate code) in the java environment and give the output.

STEPS TO RUN "ORANGE" PROGRAMMING LANGUAGE

SOURCE CODE

```
1    read a~
2    p=1~
3    loop(a>1)
4    {~
5        p=p*a~
6        a=a-1~
7    }~
8    write p~
```

INTERMEDIATE CODE

```
1    inp
2    put·a
3    get·1
4    put·p
5    get·a
6    get·1
7    grt
8    bne·17
9    get·p
10   get·a
11   mul·
12   put·p
13   get·a
14   get·1
15   sub·
16   put·a
17   get·1
18   beq·4
19   get·p
20   dsp·
21   end
22
```

OUTPUT

```
C:\Users\Deepak\Desktop\Orange\New>Java Runtime test4.orj.int
Enter Value
5
120.0

C:\Users\Deepak\Desktop\Orange\New>
```

THANK YOU!