

EX.NO : 10
28/10/2022

**CONVERTING PYTHON TO JAVA USING
LEX AND YACC**

1.Implement a Lex and Yacc program to convert the following Python code to Java code.

CODE:

LEX FILE:

```
% {

    #include <stdio.h>
    #include <stdlib.h>
    #include "y.tab.h"
% }

variable ([a-zA-Z][0-9]*)+
num [0-9]*
special [+|*|_|\\|-|?|\\%|/]
alp [a-zA-Z]

%%

{ variable }[\\ ]*(=)\\[(\\{ num }+\\,\\{ num }+)*\\]
{ yylval.f = yytext; return STR; }

{ variable }[\\ ]*(=)\\["\\({ alp }*{ num }{ special }*)*\\'\\,\\'\\({ alp }*{ num }{ special }*)*\\'\\)*\\]
{ yylval.f = yytext; return STR; }

{ variable }[\\ ]*(=)\\['\\({ alp }*{ num }{ special }*)*\\'\\,\\'\\({ alp }*{ num }{ special }*)*\\'\\)*\\]
{ yylval.f = yytext; return STR; }

[\\t\\n|.\\*]      { return 0; }

%%

int yywrap()
{
return -1;
}
```

YACC FILE:

```
% {

    #include <stdio.h>
    #include <string.h>
```

```

#include <stdlib.h>
extern int yylex();

void yyerror(char *msg);
char var[20];
int i=0,k=0;

% }

%union {
    char* f;
}

%token <f> STR
%type <f> E

%%

S : E {
    while($1[i]!=''){
        var[i]=$1[i];
        i++;
    }
    printf("Java : \n");
    while($1[i]!='(') i++;
    i++;
    k=$1[i];
    if(k>47){
        printf("List<Integer> %s=new ArrayList<Integer>()\n",var);
    }else{
        printf("List<String> %s=new ArrayList<String>()\n",var);
    }
}

;

E : STR {$$ = $1;}
;

%%

void yyerror(char *msg)
{
    fprintf(stderr, "%s\n", msg);
}

```

```

        exit(1);
    }

int main()
{
    printf("Python : ");
    yyparse();
    return 0;
}

```

OUTPUT:

```

C:\Flex Windows\prg>yacc -dy ass10q.y
C:\Flex Windows\prg>lex ass10q.l
C:\Flex Windows\prg>gcc -g lex.yy.c y.tab.c
C:\Flex Windows\prg>a
Python : num=[22,19,765]
Java :
List<Integer> num=new ArrayList<Integer>()

```

```

C:\Flex Windows\prg>a
Python : str=['akash','compile','yacc program']
Java :
List<String> str=new ArrayList<String>()

C:\Flex Windows\prg>a
Python : fruits=["apple","Mango","lime"]
Java :
List<String> fruits=new ArrayList<String>()

```

RESULT:

The above lex and yacc program for converting PYTHON list to JAVA array was successfully completed.