UE17CS351
COMPILER DESIGN PROJECT
Python Compiler Using Lex and Yacc

Team Members :

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Input Python Program :

```
import pandas
x=10
y=10

x+y
listX = []
#Comment
def F(A, B, C):
	while(listX[2]==y):
		c=0
		z=10
		b=z
		if(z==b):
			c=10+b
		else:
			c=10+c
		w=21

#Comment
m = F(10, 10, 10)
if(x==y):
	x=10
else:
	x=10
```

Result :

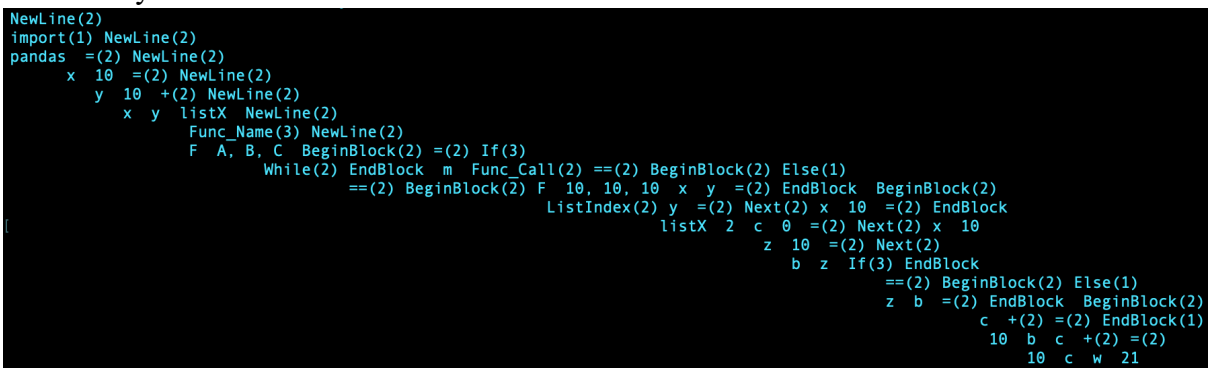
Symbol Table :

Name	Class	Scope	Declared Line Number	Latest Occurence Line Number	Value
pandas	Variable	0	1	1	
x	Variable	0	2	24	10
y	Variable	0	3	21	10
listX	Variable	0	6	9	2
F	Function	0	8	20	
A	Parameter	0	8	8	
B	Parameter	0	8	8	
C	Parameter	0	8	8	
c	Variable	2	10	16	10
z	Variable	2	11	13	10
b	Variable	2	12	14	
w	Variable	2	17	17	21
m	Variable	0	20	20	

Tokens :

```
1 T_IMPT T_pandas T_NL
2 T_x T_EQL T_10 T_NL
3 T_y T_EQL T_10 T_NL
4 T_NL
5 T_x T_PL T_y T_NL
6 T_listX T_EQL T_OB T_CB T_NL
7 T_NL
8 T_Def T_F T_OP T_A T_Comma T_B T_Comma T_C T_CP T_Cln T_NL
9 T_ID T_While T_OP T_listX T_OB T_2 T_CB T_EQ T_y T_CP T_Cln T_NL
10 T_ID T_c T_EQL T_0 T_NL
11 T_ND T_z T_EQL T_10 T_NL
12 T_ND T_b T_EQL T_z T_NL
13 T_ND T_If T_OP T_z T_EQ T_b T_CP T_Cln T_NL
14 T_ID T_c T_EQL T_10 T_PL T_b T_NL
15 T_DD T_Else T_Cln T_NL
16 T_ID T_c T_EQL T_10 T_PL T_c T_NL
17 T_DD T_w T_EQL T_21 T_NL
18 T_DD T_NL
19 T_NL
20 T_m T_EQL T_F T_OP T_10 T_Comma T_10 T_Comma T_10 T_CP T_NL
21 T_If T_OP T_x T_EQ T_y T_CP T_Cln T_NL
22 T_ID T_x T_EQL T_10 T_NL
23 T_Else T_Cln T_NL
24 T_ID T_x T_EQL T_10 T_NL
25 T_NL
26 T_EOF
Valid Python Syntax
```

Abstract Syntax Tree :



Intermediate Code :

```
import pandas
T2 = 10
x = T2
T5 = 10
y = T5
T8 = x
T9 = y
T10 = T8 + T9
Begin Function F
T15 = listX[2]
T16 = y
T17 = T15 == T16
L0: If False T17 goto L1
T18 = 0
c = T18
T21 = 10
z = T21
T24 = z
b = T24
T27 = z
T28 = b
T29 = T27 == T28
If False T29 goto L2
T30 = 10
T31 = b
T32 = T30 + T31
c = T32
goto L3
L2: T37 = 10
T38 = c
T39 = T37 + T38
c = T39
T42 = 21
w = T42
L3: goto L0
L1: End Function F
Push Param 10
Push Param  10
Push Param  10
(T63)Call Function F, 3
Pop Params for Function F, 3
m = T63
T66 = x
T67 = y
T68 = T66 == T67
If False T68 goto L6
T69 = 10
x = T69
goto L7
L6: T74 = 10
x = T74
L7:
```