EXPERIMENT – 4(PROJECT)

Group member- IT004 Parth Bandel
IT005 Dev Bhagat
IT006 Kaushal Bhalaiya

Grammar Name: Simple and Float number operations with binary and unary assignment operators.

Aim: Scanner phase implementation in C language

Code:

```
#include<bits/stdc++.h>
using namespace std;
void identify(string s)
{
 int length = s.length();
 int i=0;
 while(i<length)
 {
 if (s[i] == 's')
 {
 i++;
 if (s[i] == 'i' && s[i + 1] == 'm' && s[i + 2] == 'p' && s[i +
3] == 'l' && s[i +
4] == 'e') {
 cout<<"<Keyword , Simple>\n";
 i += 5;
 }
 else {
 i--;
```

```
//goto var;
}
}
else if (s[i] == 'f') {
i++;
if (s[i] == 'l' && s[i+1] == 'o' && s[i+2] == 'a' && s[i+3] ==
't') {
cout<<"<Keyword , Float>\n";
i += 4;
}
else i--;
}
else if (isupper(s[i]))
{
//var:
vector<char>v;
v.push_back(s[i++]);
int len=1, dig=0;
if (isdigit(s[i]) || isdigit(s[i+1])) {
v.push_back(s[i++]);
v.push_back(s[i++]);
loop1:
if((s[i] >= 'A' && s[i] <= 'Z') || (s[i] >= 'a' && s[i] <= 'z')){
v.push_back(s[i++]);
goto loop1;
}
}
else {
loop2:
if((s[i] >= 'A' && s[i] <= 'Z') || (s[i] >= 'a' && s[i] <= 'z')){
v.push_back(s[i++]);
goto loop2;
}
```

```
}
if(len!=0){
cout<<"< ID , ";
for(auto ch:v) cout<<ch;
cout<<" >\n";
}
}
else if (s[i] == '=') {
if(s[i+1] == '+') { cout << "<ASSIGNOP, =+>\n"; i += 2; }
else if(s[i+1] == '-') { cout << "<ASSIGNOP, =->\n"; i += 2;
}
else { cout << "<ASSIGNOP, =>\n"; i++;}
}
else if (s[i] == '+') {
if(s[i+1] == '+') { cout << "<OP, ++>\n"; i += 2;}
else goto invalid;
}
else if (s[i] == '-') {
if(s[i+1] == '-') { cout << "<OP, -->\n"; i += 2;}
else goto invalid;
}
else if (s[i] == '*') {
if(s[i+1] == '*') { cout << "<OP, *>\n"; i += 2; }
else goto invalid;
}
else if (s[i] == ';') {
cout << "<;>\n"; i++;
}
else if (s[i] == ':') {
cout << "<:>\n"; i++;
}
else if ((int) s[i] == 32) {
i++;
```

```
 }
 else if (s[i] == '\t') {
 i += 4;
 }
 else {
 invalid:
 cout<<"Invalid Token : "<<s[i++]<<endl;
 }
 }
}
int main()
{
 string s;
 cout<<"INPUT : ";
 getline(cin, s);
 identify(s);
}
```

Output: