NAME – Yash Ginoya

ROLL NO. – 20BCE075

COURSE – 2CS701- Compiler Construction

PRACTICAL – 8

AIM: To implement a Type Checker.: to assign Data type to each identifier as per declaration statement. Verify Data type as per each programming construct and report appropriate error message

Methodology Followed:

```
#include <iostream>
using namespace std;
 int main() {     int n, i, flag = 0;
char vari[15], typ[15], b[15], c;     cout <<
"Enter the number of variables: ";     cin >>
n;
     for (i = 0; i < n; i++) {         cout << "\nEnter the variable " << i +
1 << " : ";         cin >> vari[i];         cout << "Enter the type of
variable " << i + 1 << " (float-f, int-i) :
";         cin >> typ[i];
if (typ[i] == 'f') {
flag = 1;
        }
    }
    cout << "\nEnter the Expression (end with $) :
";     i = 0;     cin.ignore(); // Ignore the
newline character     while ((c = cin.get()) != '$')
{         b[i] = c;         i++;     }
    int k = i;
     for (i = 0; i < k; i++)
{         if (b[i] == '/') {
flag = 1;             break;
        }
```

```
    }      for (i = 0; i < n; i++) {         if (b[0] == vari[i]) {
if (flag == 1) {                 if (typ[i] == 'f') {
cout << "\nThe datatype is correctly defined..!" << endl;
break;                 } else {                    cout << "Identifier " <<
vari[i] << " must be a float type..!" << endl;
                    break;
                }            } else {                cout << "\nThe
datatype is correctly defined..!" << endl;                break;
            }
        }
    }
return 0;
}
```

Output:

```
Enter the number of variables: 3

Enter the variable 1 : x
Enter the type of variable 1 (float-f, int-i) : i

Enter the variable 2 : y
Enter the type of variable 2 (float-f, int-i) : f

Enter the variable 3 : z
Enter the type of variable 3 (float-f, int-i) : i

Enter the Expression (end with $) : z=x*y$
Identifier z must be a float type..!
```

```
Enter the number of variables: 3

Enter the variable 1 : x
Enter the type of variable 1 (float-f, int-i) : f

Enter the variable 2 : y
Enter the type of variable 2 (float-f, int-i) : i

Enter the variable 3 : z
Enter the type of variable 3 (float-f, int-i) : f

Enter the Expression (end with $) : x=y/z$

The datatype is correctly defined..!
```