

Name: Pratyush Khare

Roll No: 20BCE519

Subject: Compiler Construction

Practical 8

Aim: To implement a Type Checker.

Code:

```
#include<stdio.h>
#include<stdlib.h>
int main()
{
    int n,i,k,flag=0;
    char vari[15],typ[15],b[15],c;
    printf("Enter the number of variables:");
    scanf(" %d",&n);
    for(i=0;i<n;i++)
    {
        printf("Enter the variable[%d]:",i);
        scanf(" %c",&vari[i]);
        printf("Enter the variable-type[%d](float-f,int-i):",i);
        scanf(" %c",&typ[i]);
        if(typ[i]=='f')
            flag=1;
    }
    printf("Enter the Expression(end with $):");
    i=0;
    getchar();
    while((c=getchar())!='$')
    {
        b[i]=c;
        i++;
    }
}
```

```
}  
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')  
            {  
                printf("\nthe datatype is correctly defined..!\n");  
                break;  
            }  
            else  
            {  
                printf("Identifier %c must be a float type..!\n",vari[i]);  
                break;  
            }  
        }  
    }  
    else  
    {  
        printf("\nthe datatype is correctly defined..!\n");  
        break;  
    }  
}
```

```
    }  
    }  
}  
return 0;  
}
```

Output:

```
PS C:\Users\91820> & 'c:\Users\91820\.vscode\ext  
kes.ktr' '--stderr=Microsoft-MIEngine-Error-xkepl  
Enter the number of variables:3  
Enter the variable[0]:A  
Enter the variable-type[0](float-f,int-i):i  
Enter the variable[1]:B  
Enter the variable-type[1](float-f,int-i):f  
Enter the variable[2]:C  
Enter the variable-type[2](float-f,int-i):i  
Enter the Expression(end with $):A+B*C$  
Identifier A must be a float type..!
```