Roll No. :- 20BCE204
Course Code :- 2CS701
Course Name:- Compiler Construction

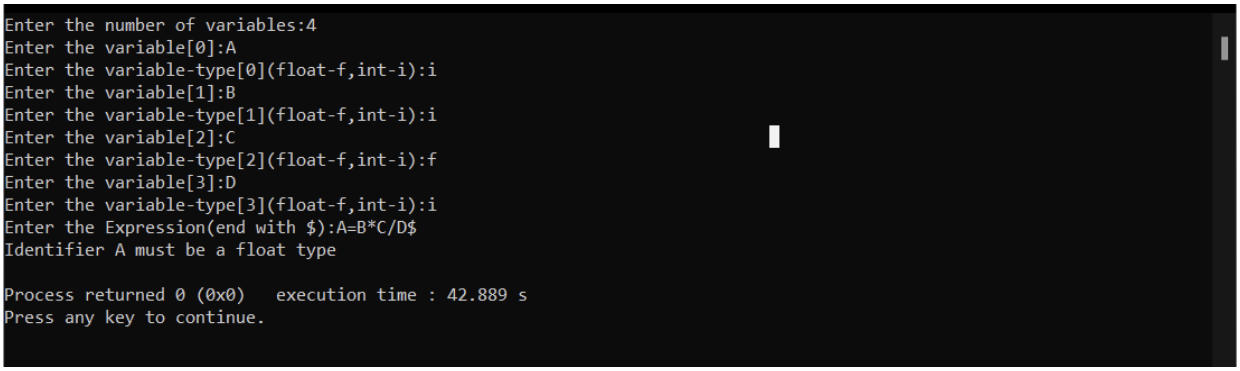
AIM :- To implement a Type Checker.

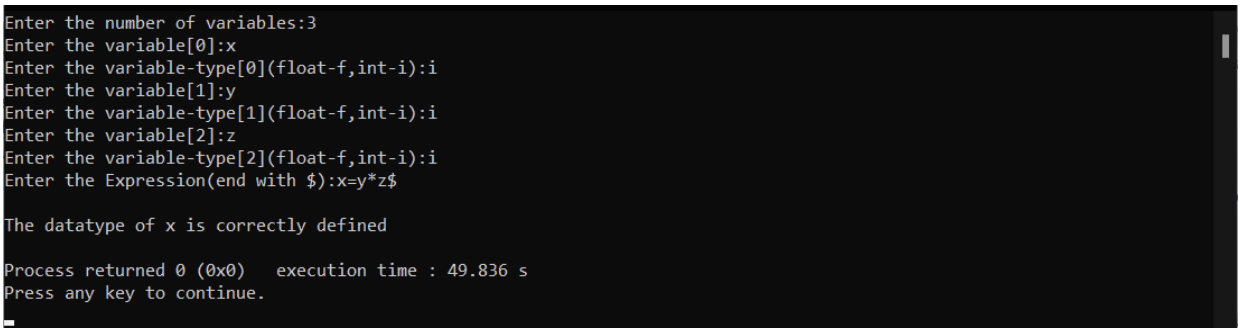
Code:

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

printf("\nThe datatype of %c is correctly defined\n",vari[i]);
                break;
            }
        }
    }
    return 0;
}
```

Output:




Enter the number of variables:3
Enter the variable[0]:x
Enter the variable-type[0](float-f,int-i):i
Enter the variable[1]:y
Enter the variable-type[1](float-f,int-i):i
Enter the variable[2]:z
Enter the variable-type[2](float-f,int-i):i
Enter the Expression(end with $):x=y*z$
The datatype of x is correctly defined
Process returned 0 (0x0) execution time : 49.836 s
Press any key to continue.