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Course Name and Course Code: 2CS701 Compiler Construction

Practical No: 8

Aim: To implement a Type Checker.: Extend experiment 5 to assign Data type to each identifier as per declaration statement. Verify Data type as per each programming construct and report appropriate error message

Source Code:

```
#include <bits/stdc++.h>
using namespace std;
int main()
{
    vector<string> sen;
    cout<<"enter # to end "<<endl;

    cout<<"Enter the code: "<<endl;
    while(1){

        string s;
        getline(cin,s);
        sen.push_back(s);

        if(s=="#")
            break;
    }
    map<char,string> mp;
    int f=0;
    for(auto i:sen){
        // cout<<"sen "<<i<<endl;
        int ci=0,cf=0;
        if(i[0]=='i'){

            for(int j=4;j<i.size();j++){
                if(int(i[j])>=97 && int(i[j])<=122){

                    mp[i[j]]="int";
                }
            }
        }
    }
}
```

```

    }

    else if(i[0]=='f'){

        for(int j=6;j<i.size();j++){
            if(int(i[j])>=97 && int(i[j])<=122){

                mp[i[j]]="float";
            }
        }
    }

    else{

        for(int j=0;j<i.size();j++){
            if(int(i[j])>=97 && int(i[j])<=122){

                // cout<<mp[i[j]]<<endl;
                if(mp[i[j]]=="int")
                    ci++;
                else if(mp[i[j]]=="float")
                    cf++;
            }

        }
        // cout<<"ci="<<ci<<" cf="<<cf<<endl;
        if(cf!=0 && ci!=0){
            // cout<<"Error"<<endl;
            f=1;
        }

    }

    // for(auto k:mp){
    //     cout<<k.first<<" "<<k.second<<endl;
    // }
}

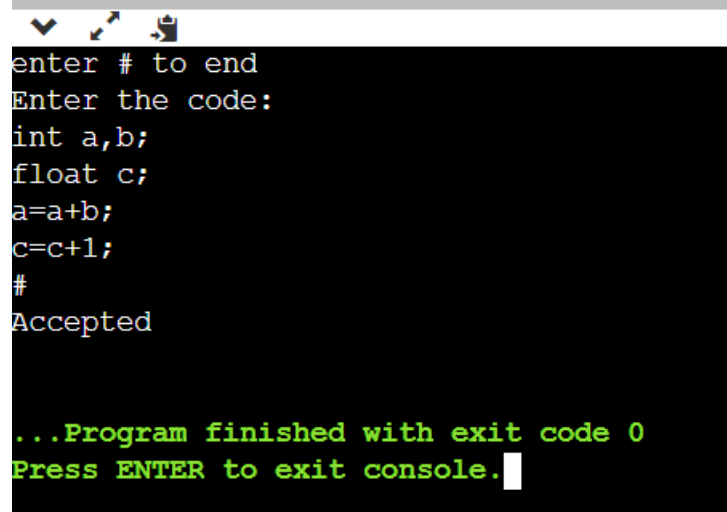
if(f==1){
    cout<<"Error"<<endl;
}
else{
    cout<<"Accepted"<<endl;
}

```

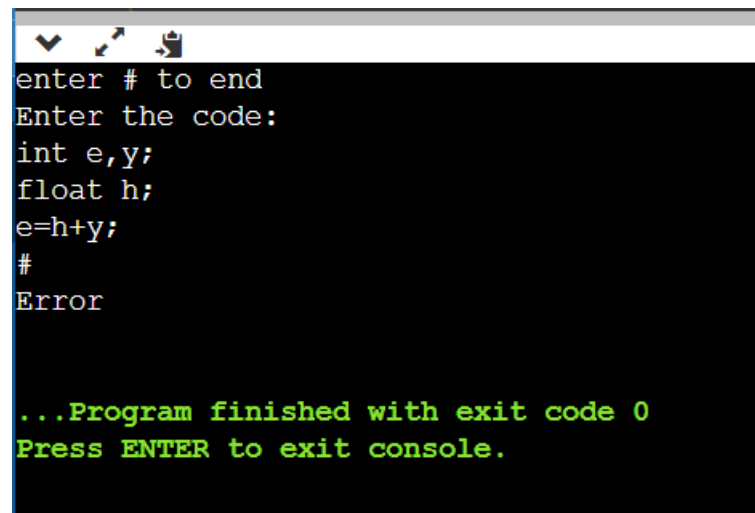
```
}
```

```
}
```

Output:



A screenshot of a C++ IDE window. The top toolbar shows icons for a dropdown menu, a zoom icon, and a copy icon. The code editor contains the following text: `enter # to end`, `Enter the code:`, `int a,b;`, `float c;`, `a=a+b;`, `c=c+1;`, `#`, and `Accepted`. At the bottom, a green status bar displays `...Program finished with exit code 0` and `Press ENTER to exit console.` with a cursor.



A screenshot of a C++ IDE window. The top toolbar shows icons for a dropdown menu, a zoom icon, and a copy icon. The code editor contains the following text: `enter # to end`, `Enter the code:`, `int e,y;`, `float h;`, `e=h+y;`, `#`, and `Error`. At the bottom, a green status bar displays `...Program finished with exit code 0` and `Press ENTER to exit console.`