EXPERIMENT 6.

UNIFICATION PROBLEM

AIM.

Implementation of unification problem and to pass all the test cases.

ALGORITHM.

STEP 1. Initialize the substitution set to be empty.

STEP 2. Recursively unify atomic sentences

i) Substitute $\frac{t_i}{v_i}$ in the existing substitution

ii) Add $\frac{t_i}{v_i}$ to the substitution setlist.

iii) If both the expression are funct the funct name must be similar and no of argument must be same in both expression.

TEST CASES.

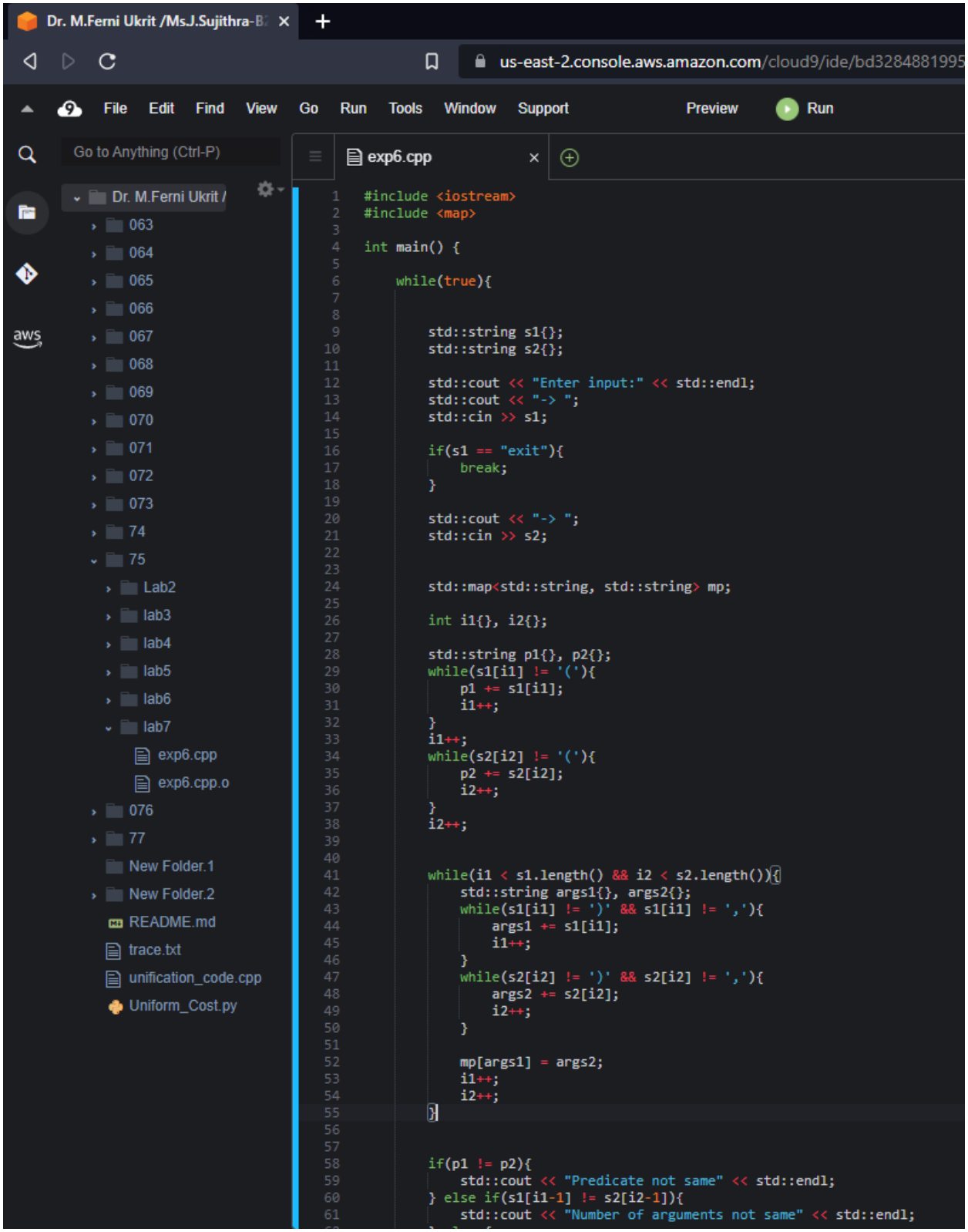
$T_{c1} = P(x,y) \quad P(t,z) \Rightarrow \{x/t\}, \{\frac{y}{z}\}$

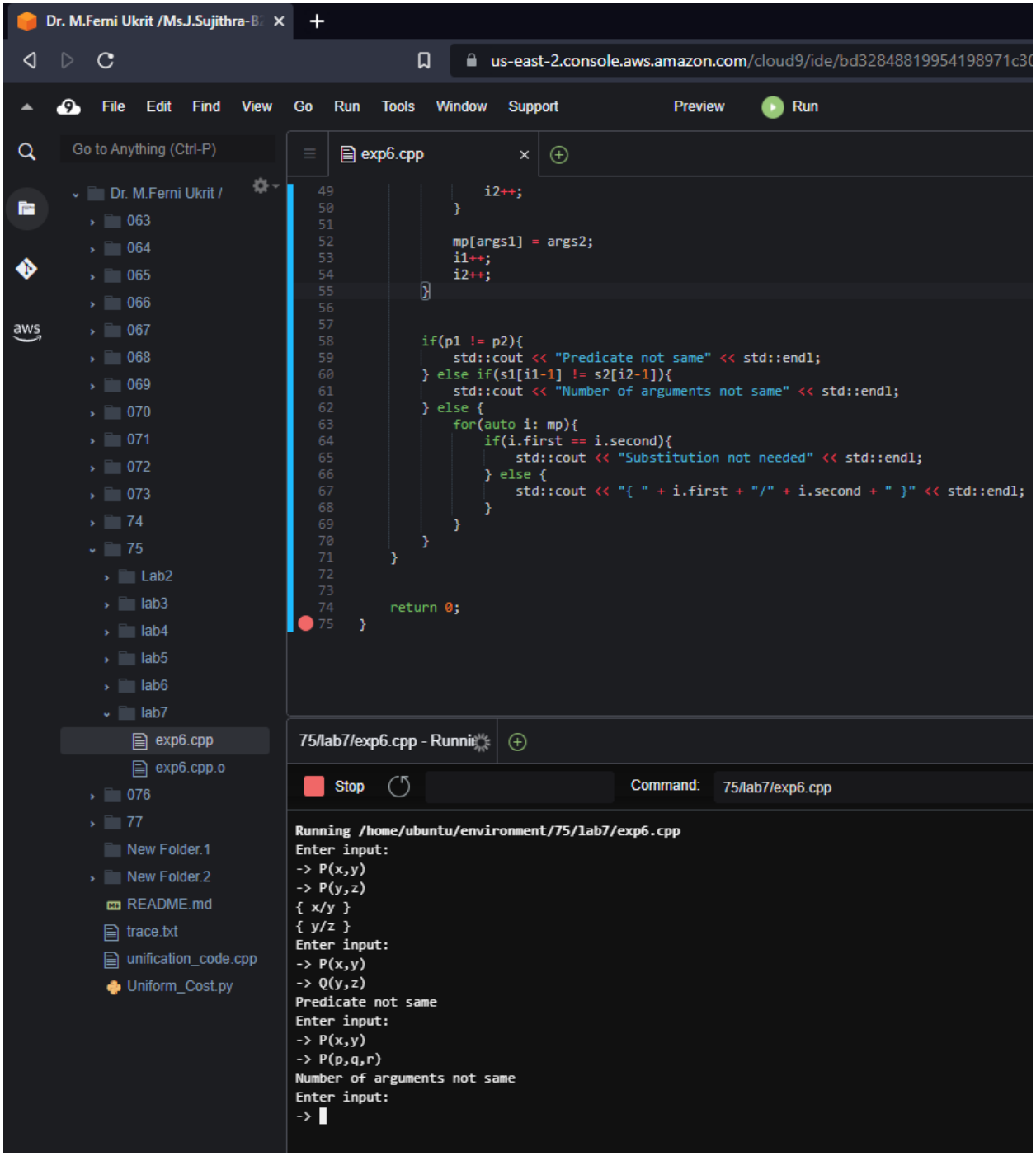
$T_{c2} = P(x,y) \quad Q(t,z) \Rightarrow$ predicate symbol not same

$T_{c3} = P(x,y) \quad P(t,v,z) \Rightarrow$ no. of argument not same

RESULT.

Implementation of unification problem is done


Dr. M.Ferni Ukrit /Ms.J.Sujithra-B
us-east-2.console.aws.amazon.com/cloud9/ide/bd3284881995
File Edit Find View Go Run Tools Window Support Preview Run
Go to Anything (Ctrl-P)
Dr. M.Ferni Ukrit /
063
064
065
066
067
068
069
070
071
072
073
74
75
Lab2
lab3
lab4
lab5
lab6
lab7
exp6.cpp
exp6.cpp.o
076
77
New Folder.1
New Folder.2
README.md
trace.txt
unification_code.cpp
Uniform_Cost.py
exp6.cpp
#include <iostream>
#include <map>
int main() {
while(true){
std::string s1{};
std::string s2{};
std::cout << "Enter input:" << std::endl;
std::cout << "-> ";
std::cin >> s1;
if(s1 == "exit"){
break;
}
std::cout << "-> ";
std::cin >> s2;
std::map<std::string, std::string> mp;
int i1{}, i2{};
std::string p1{}, p2{};
while(s1[i1] != '('){
p1 += s1[i1];
i1++;
}
i1++;
while(s2[i2] != '('){
p2 += s2[i2];
i2++;
}
i2++;
while(i1 < s1.length() && i2 < s2.length()){
std::string args1{}, args2{};
while(s1[i1] != ')' && s1[i1] != ','){
args1 += s1[i1];
i1++;
}
while(s2[i2] != ')' && s2[i2] != ','){
args2 += s2[i2];
i2++;
}
mp[args1] = args2;
i1++;
i2++;
}
if(p1 != p2){
std::cout << "Predicate not same" << std::endl;
} else if(s1[i1-1] != s2[i2-1]){
std::cout << "Number of arguments not same" << std::endl;


Dr. M.Ferni Ukrit /Ms.J.Sujithra-B
us-east-2.console.aws.amazon.com/cloud9/ide/bd32848819954198971c3
File Edit Find View Go Run Tools Window Support Preview Run
Go to Anything (Ctrl-P)
Dr. M.Ferni Ukrit /
063
064
065
066
067
068
069
070
071
072
073
74
75
Lab2
lab3
lab4
lab5
lab6
lab7
exp6.cpp
exp6.cpp.o
076
77
New Folder.1
New Folder.2
README.md
trace.txt
unification_code.cpp
Uniform_Cost.py
exp6.cpp
i2++;
}
mp[args1] = args2;
i1++;
i2++;
}
if(p1 != p2){
std::cout << "Predicate not same" << std::endl;
} else if(s1[i1-1] != s2[i2-1]){
std::cout << "Number of arguments not same" << std::endl;
} else {
for(auto i: mp){
if(i.first == i.second){
std::cout << "Substitution not needed" << std::endl;
} else {
std::cout << "{ " + i.first + "/" + i.second + " }" << std::endl;
}
}
}
}
return 0;
}
75/lab7/exp6.cpp - Runni
Stop
Command: 75/lab7/exp6.cpp
Running /home/ubuntu/environment/75/lab7/exp6.cpp
Enter input:
-> P(x,y)
-> P(y,z)
{ x/y }
{ y/z }
Enter input:
-> P(x,y)
-> Q(y,z)
Predicate not same
Enter input:
-> P(x,y)
-> P(p,q,r)
Number of arguments not same
Enter input:
->
aws