Compiler Design Lab

Paper Code: PCCCS691

Work Book

Department of Computer Science & Engineering

B. Tech

3rd year 6th Semester

Assignment No. 2

Program Name: Write A C program to test whether a given identifier is valid or not.

Objective: Understanding the validation of the input identifier

Resource: Online Compiler To simulate the program and test the output result

Program Code:

```c
#include<stdio.h>

#include<stdlib.h>

#include<string.h>

int main()

{

    char string[50];

    int count=0,i;

    printf("Enter the String: ");

    gets(string);

//int len=strlen(string);

//printf("length:%d",len);

    if((string[0]>='a'&&string[0]<='z') ||
(string[0]>='A'&&string[0]<='Z') || (string[0]=='_') || (string[0]=='$'))

        {

                for(i=1;i<=strlen(string);i++)

                {

                        if((string[i]>='a'&& string[i]<='z') || (string[i]>='A'
&& string[i]<='Z') || (string[i]>='0'&& string[i]<='9') || (string[i]=='_'))

                        { count++;
```

```c
                }
            }
        }
    if(count==(strlen(string)-1))
    {printf("Input string is a valid identifier");
    }
    else
    { printf("Input string is not a valid identifier")   }
     return 0;
}
```

Input & Output:

Program Name: Write A C program to recognize a string under a*,a*b+, abb

Objective: Understanding the validation of the input string under the parameter mentioned

Resource: Online Compiler To simulate the program and test the output result

Program Code: #include<stdio.h>

#include<conio.h>

#include<string.h>

#include<stdlib.h>

void main()

{

char s[20],c;

int state=0,i=0;

printf("\n Enter a string:");

gets(s);

while(s[i]!='\0'){

switch(state){

case 0: c=s[i++];

if(c=='a')

state=1;

else if(c=='b')

state=2;

else

state=6;

break;

case 1: c=s[i++];

```
if(c=='a')
state=3;
else if(c=='b')
state=4;
else
state=6;
break;
case 2: c=s[i++];
if(c=='a')
state=6;
else if(c=='b')
state=2;
else
state=6;
break;
case 3: c=s[i++];
if(c=='a')
state=3;
else if(c=='b')
state=2;
else
state=6;
break;
case 4: c=s[i++];
if(c=='a')
state=6;
else if(c=='b')
```

```c
state=5;
else
state=6;break;
case 5: c=s[i++];
if(c=='a')
state=6;
else if(c=='b')
state=2;
else
state=6;
break;
case 6: printf("\n %s is not recognised.",s);
exit(0);
}
}if(state==1)
printf("\n %s is accepted under rule 'a'",s);
else if((state==2)||(state==4))
printf("\n %s is accepted under rule 'a*b+'",s);
else if(state==5)
printf("\n %s is accepted under rule 'abb'",s);
getch();
}
```

Input & Output:

```
Enter a string:aaaabbbbb

aaaabbbbb is accepted under rule 'a*b+'
```