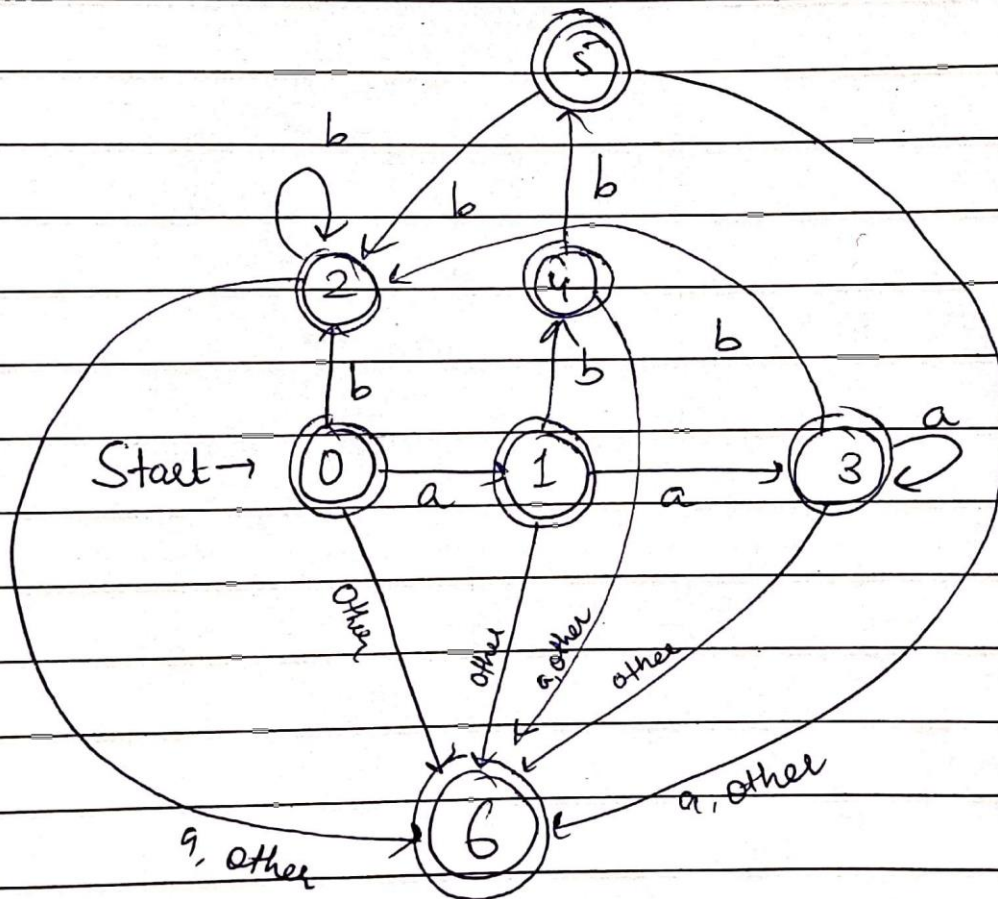


ASSIGNMENT – 4

Write a C program to recognize strings under 'a*', 'a*b+', 'abb'.

STATE DIAGRAM (UI9CS048)



CS Scanned with CamScanner

Source 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("Enter a string: ");
    scanf("%[^\\n]s",s);
    printf("Entered string is: %s",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')
                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)|| (state==3)|| (state==0))
    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);
else
    printf("\n%s is not recognised.",s);
getch();
}

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```

PS C:\Users\Sakshi Jain\Desktop\assignments\SS\ASS04> cd "c:\Users\Sakshi Jain\Desktop\assignm
ents\SS\ASS04\" ; if ($?) { gcc q1.c -o q1 } ; if ($?) { .\q1 }
Enter a string: abb
Entered string is: abb
abb is accepted under rule 'abb'
PS C:\Users\Sakshi Jain\Desktop\assignments\SS\ASS04>

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```

PS C:\Users\Sakshi Jain\Desktop\assignments\SS\ASS04> cd "c:\Users\Sakshi Jain\Desktop\assignm
ents\SS\ASS04\" ; if ($?) { gcc q1.c -o q1 } ; if ($?) { .\q1 }
Enter a string: aaaa
Entered string is: aaaa
aaaa is accepted under rule 'a*'
PS C:\Users\Sakshi Jain\Desktop\assignments\SS\ASS04>

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```

PS C:\Users\Sakshi Jain\Desktop\assignments\SS\ASS04> cd "c:\Users\Sakshi Jain\Desktop\assignm
ents\SS\ASS04\" ; if ($?) { gcc q1.c -o q1 } ; if ($?) { .\q1 }
Enter a string: aaabbbb
Entered string is: aaabbbb
aaabbbb is accepted under rule 'a*b+'
PS C:\Users\Sakshi Jain\Desktop\assignments\SS\ASS04>

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
PS C:\Users\Sakshi Jain\Desktop\assignments\SS\ASS04> cd "c:\Users\Sakshi Jain\Desktop\assignments\SS\ASS04\" ; if ($?) { gcc q1.c -o q1 } ; if ($?) { .\q1 }
Enter a string: ba
Entered string is: ba
ba is not recognised.
PS C:\Users\Sakshi Jain\Desktop\assignments\SS\ASS04> █
```