# Lab Assignment -1

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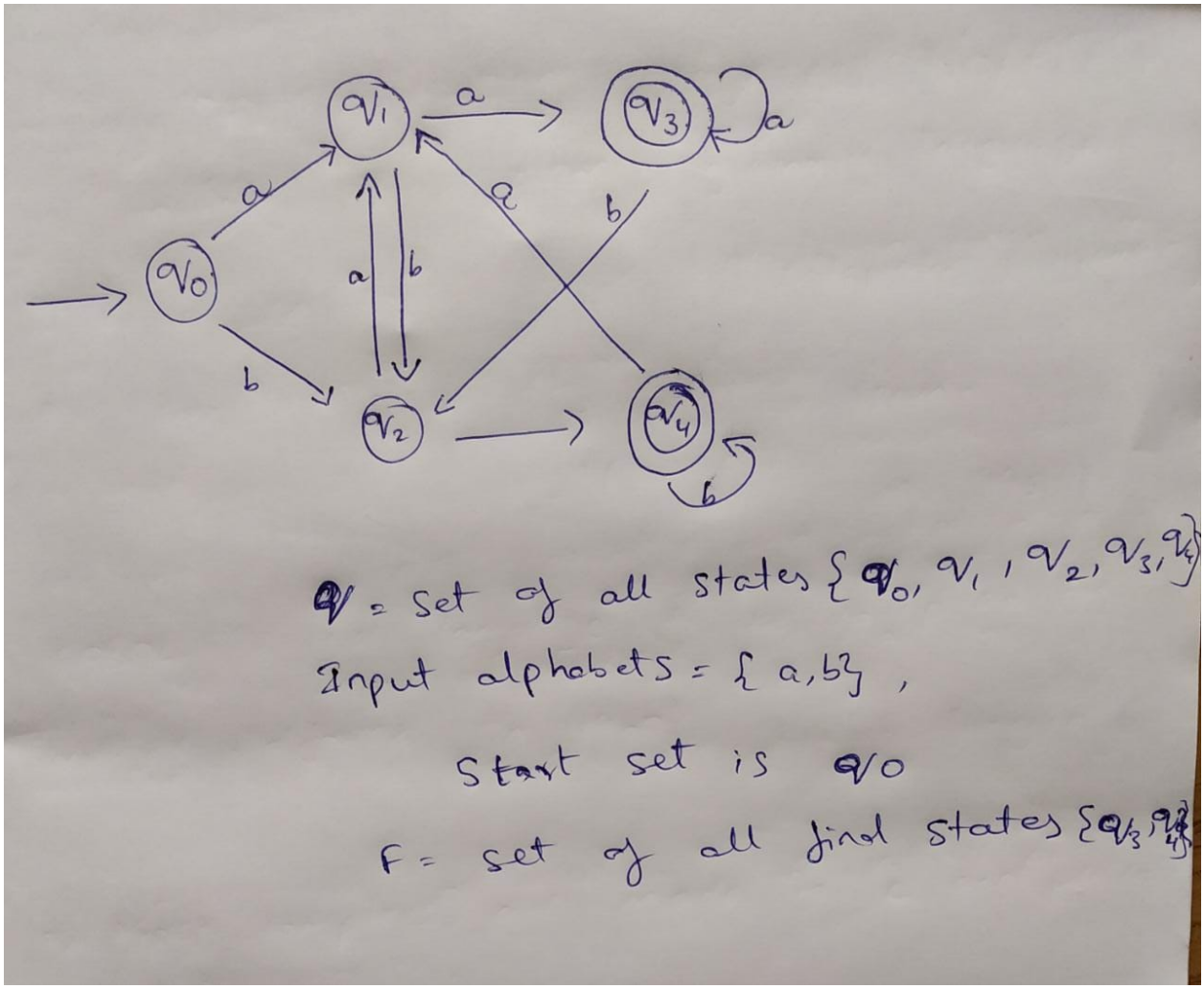
**CSE C**

## Program 2 :

Implementation of Language recognizer for a set of all strings ending with two symbols of the same type.

## Description :

Any string where the last two symbols were the same is acceptable. The strings are like aa, aaa, baa, bababb, etc. Deterministic Finite Automata for the given language is given below :




Transitions are defined in this transition diagram .

**Algorithm:** Language recognizer
**Input:** input //input string
**Output:**

Algorithm prints a message
“String accepted”: If the input is acceptable by the language,
“String not accepted” otherwise,
“Invalid token”: If the input string contains symbols other than the input alphabet.

**CODE :**

```
#include <stdio.h>

int main(void)

{

        char s[1000];

   scanf("%s",s);

        int state = 1;

      for(int i=0; s[i]!='\0'; i++)

        {


                switch(s[i])

                {

                 case 'a':

                        if(state==1)
```

```
            state = 2;


        else if(state==2)
            state=3;
        else  if(state==4)
            state =2 ;
        else if(state ==5)
            state = 2;


        break;
case 'b' :
        if(state==1)
            state = 4;


       else  if(state == 4)
            state = 5;


       else  if(state == 2)
            state = 4;
```

```
                    else   if(state ==3)
                        state = 4;

                    break;

                default:
                    printf("Invalid Token");
                    exit(0);
                }

        }
    if(state==3 || state ==5)
        printf("accepted ");

    else
        printf("not accepted");
     printf("\n");
      return 0;
}
```

**Test Cases :**

| INPUT | OUTPUT |
|---|---|
| aa | String accepted |
| aabb | String accepted |
| abc | Invalid token |
| abab | String not accepted |
| aaabbb | String accepted |