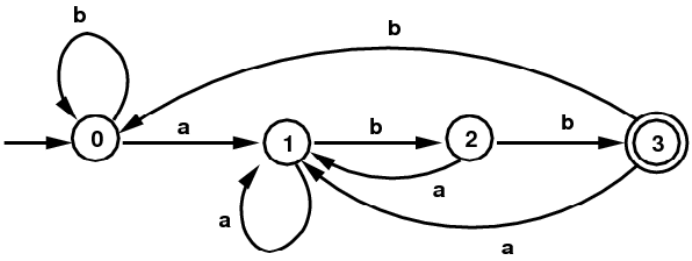
Practical Assignment : 03

Convert the following regular expression (R.E.) into DFA and write a 'C' program to simulate the DFA for given input Strings.

(a) a(a|b)* ab.
(b) digit (digit)* (. digit (digit)* | ε)

Sample example program is give below.
// Program to recognize (a|b)*abb




```
#include <stdio.h>
int main() {
 char ch;
 int state = 0;
printf(" Enter your String :");
 while (1)
{              ch = getchar();    if (ch == '$') break; // while
             switch (state)
             {
              case 0:  if (ch == 'a') state = 1; else if (ch == 'b') state = 0; break;
              case 1:              if (ch == 'a') state = 1;   else if (ch == 'b') state = 2;   break;
              case 2:              if (ch == 'a') state = 1;  else if (ch == 'b') state = 3;   break;
             case 3:              if (ch == 'a') state = 1;  else if (ch == 'b') state = 0;   break;
             }
             printf("ch: %c, next state: %i",  ch, state); if (state == 3)
            printf(" Terminal");  printf("\n");
 }
  if (state == 3) printf("Accept\n");  else printf("Reject\n");
}
```

Enter your String : abaababb$
ch: a, next state: 1
ch: b, next state: 2
ch: a, next state: 1
ch: a, next state: 1
ch: b, next state: 2
ch: a, next state: 1
ch: b, next state: 2
ch: b, next state: 3 Terminal
Accept

Enter your String : abaababbab$
ch: a, next state: 1
ch: b, next state: 2
ch: a, next state: 1
ch: a, next state: 1
ch: b, next state: 2
ch: a, next state: 1
ch: b, next state: 2
ch: b, next state: 3 Terminal
ch: a, next state: 1
ch: b, next state: 2
Reject