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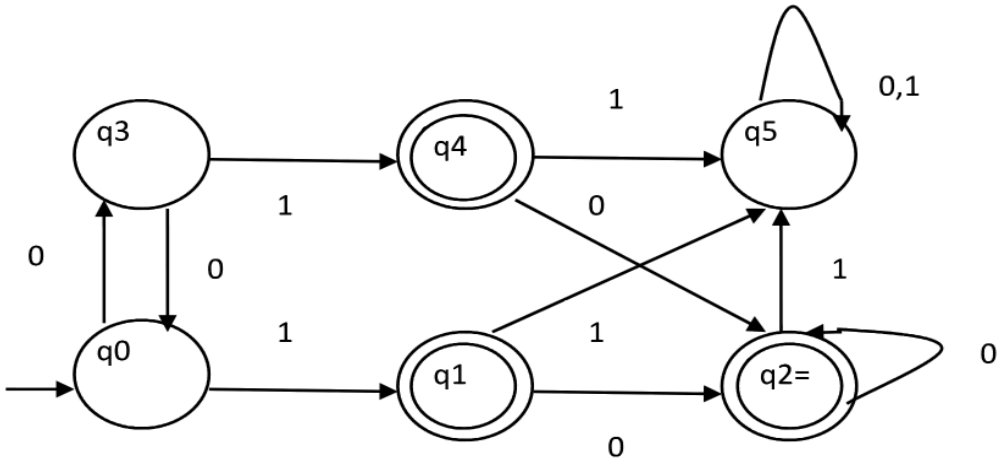
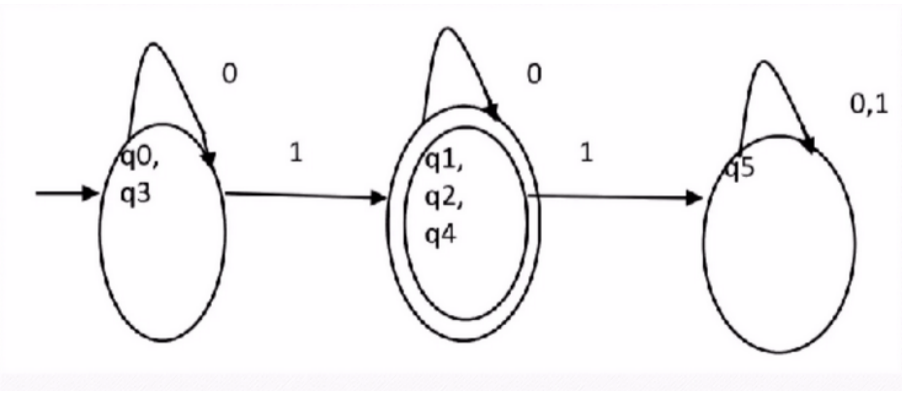
1.Minimumkan DFA berikut:



F = {q1, q2, q4}
NF = {q0, q3, q5}

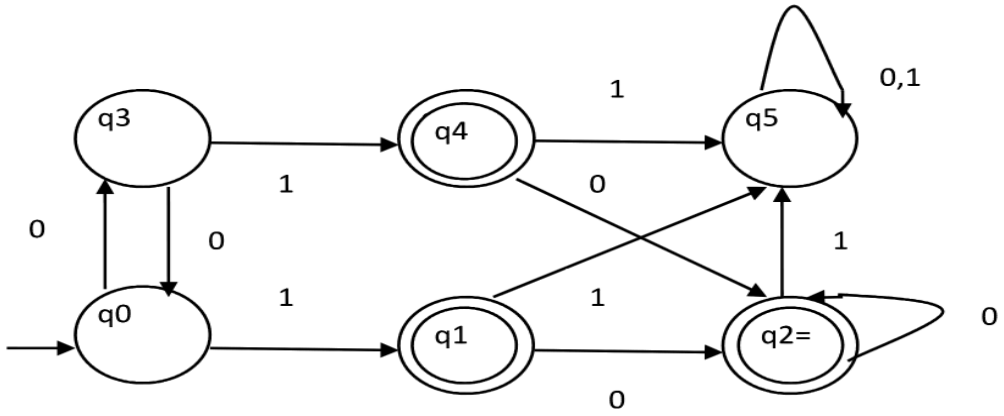
E(q0, q3)	(q3, q0)	(q1, q4)
E(q0, q5)	(q3, q5)	(q1, q5)
E(q1, q2)	(q2, q2)	(q5, q5)
E(q1, q4)	(q2, q2)	(q5, q5)
E(q2, q4)	(q2, q2)	(q5, q5)
E(q3, q5)	(q0, q5)	(q4, q5)



2. Tentukan Rightmost derivation untuk kata abbabaabbbabbab dari CFG :
S => SSS | aXb
X => ba | bba | abb

S => SSS	
S => S S aXb	S => aXb
S => S S abbab	X => bba
S => S aXb abbab	S => aXb
S => S aabbb abbab	X => abb
S => aXb aabbb abbab	S => aXb
S => abbab aabbb abbab	X => bba

3. Buat Program DFA berikut dengan **Statemen Switch**:



Urutan State : q1 q0 q2 q5 q4 q3

```
#include <iostream>
#include <time.h>
using namespace std;
int main(){
	int state;
	char inp[10];
	int pos;
	char lagi;
	do{

	cout<<"Masukkan input:  ";
```

```
cin>>inp;         //masukkan string input
state = 0;        //mulai dari state awal q1;
cout << state;
cout << "\n";

for(pos=0; inp[pos]; pos++){
switch(state) {
case 0 : //di state q1
          if(inp[pos]=='0') state = 2;   //jika dibaca 0 ke state q2
          else if(inp[pos]=='1') state=3; //jika dibaca 1 ke state q5
          break;
case 1 ://di state q0
          if(inp[pos]=='0') state = 5;   //jika dibaca ‘0' ke state q5
          else if(inp[pos]=='1') state=0; //jika dibaca '1' ke state q1
          break;
case 2 ://di state q2
          if(inp[pos]=='0') state = 2;   //jika dibaca ‘0' ke state q2
          else if(inp[pos]=='1') state=3; //jika dibaca '1' ke state q5
          break;
case 3 ://di state q5
          if(inp[pos]=='0') state = 3;   //jika dibaca ‘0' ke state q5
          else if(inp[pos]=='1') state=3; //jika dibaca '1' ke state q5
          break;
case 4 : //di state q4
          if(inp[pos]=='0') state = 2;   //jika dibaca ‘0' ke state q2
          else if(inp[pos]=='1') state=3; //jika dibaca '1' ke state q5
          break;
case 5 : //di state q3
          if(inp[pos]=='0') state = 1;   //jika dibaca ‘0' ke state q1
          else if(inp[pos]=='1') state=4; //jika dibaca '1' ke state q4
          break;
}
cout << state;
cout << "\n";
}

//jika state terakhir adalah final state (q5) maka diterima
cout << state;

if (state==5)
```

```
        cout<<"String tersebut diterima (ACCEPTED) \n";
        else
        cout<<"String Tersebut Ditolak (REJECTED)\n";

        cout<<"Masukkan input lain? (y/t) : ";
        cin>>lagi;
   } while(lagi!='t');
   return 0;
}
```