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#include <iostream>
#include <string>

using namespace std;

int main()
{
    string input;
    cout << "Enter the input String [ex: 100201 etc ] : ";
    cin >> input;

    char state = 'A';

    int size = input.size();
    for (int i = 0; i < size; i++)
    {
        cout << state;
        switch(state)
        {
            case 'A':
            {
                if(input[i]=='0')
                {
                    state = 'B';
                }
                else if(input[i]=='1')
                {
                    state = 'A';
                }
                else if(input[i]=='2')
                {
                    state = 'B';
                }
                break;
            }
            case 'B':
            {
                if(input[i]=='0')
                {
                    state = 'E';
                }
                else if(input[i]=='1')
                {
                    state = 'A';
                }
                else if(input[i]=='2')
                {
                    state = 'C';
                }
                break;
            }
            case 'C':
            {
                if(input[i]=='0')
                {
                    state = 'A';
                }
                else if(input[i]=='1')
                {
                    state = 'E';
                }
                else if(input[i]=='2')
                {
                    state = 'D';
                }
                break;
            }
            case 'D':
            {
                if(input[i]=='0')
                {
                    state = 'C';
                }
            }
        }
    }
}
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        }
        else if(input[i]=='1')
        {
            state = 'D';
        }
        else if(input[i]=='2')
        {
            state = 'E';
        }
        break;
    }
    case 'E':
    {
        if(input[i]=='0')
        {
            state = 'E';
        }
        else if(input[i]=='1')
        {
            state = 'D';
        }
        else if(input[i]=='2')
        {
            state = 'A';
        }
        break;
    }
    default:
        cout << "Wrong state.";
        break;
}
cout << " ---> " << state;
if(state == 'E')
    cout << " --- [ACCEPTING STATE] " << endl;
else
    cout << " --- [NON-ACCEPTING STATE]" << endl;
}
if (state == 'E')
{
    cout << "\nThe input string is accepted by the given DFA. !!!" << endl;
}
else
    cout << "\nThe input string is NOT accepted by the given DFA. !!!" << endl;
return 0;
}
```