**Republic of the Philippines**

**Bohol Island State University-Main Campus**

**Tagbilaran City**

**College of Engineering and Architecture**

***Vision: A premier S&T University for the formation of a world class and virtues human resource for sustainable development in Bohol and the country.***

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**Subject:** Structure of Programming Language

**Problem:** at most 5 occurences of b’s

**State Diagram**:

a a a

a

Q4

Q3

Q5

Q6

Q2

Q0

Q1

Q1

b b b

b a a

a b

b b

|  |  |  |
| --- | --- | --- |
|  | a | b |
| Q0 | Q0 | Q1 |
| Q1 | Q1 | Q2 |
| Q2 | Q2 | Q3 |
| Q3 | Q3 | Q4 |
| Q4 | Q4 | Q5 |
| Q5 | Q5 | Q6 |
| Q6 | Q6 | Q0 |

**TRANSITION TABLE**

**SOURCE CODE**

**#include<iostream>**

**using namespace std;**

**int main()**

**{**

**int j=0, state=0;**

**int table[7][2]={{0,1},{1,2},{2,3},{3,4},{4,5},{5,6},{6,0}};**

**int input;**

**int flag=0;**

**char st[20];**

**cin>>st;**

**while(st[j]!='\0')**

**{**

**// get column for symbol**

**switch(st[j])**

**{**

**case 'a': input=0; break; //column**

**case 'b': input=1; break; //column**

**}**

**state = table[state][input];**

**if (state==6){**

**flag=1;**

**break;**

**}**

**j++;**

**}**

**if (flag==0){**

**cout<<"ACCEPTED";**

**}**

**else {**

**cout<<"NOT ACCEPTED";**

**}**

**return 0;**

**}**