

```
#include <iostream>
```

```
#include <string>
```

```
using namespace std;
```

```
enum State { A, B, C, D, E, F, G, H };
```

```
State transition(State current, char input) {
```

```
    switch (current) {
```

```
        case A:
```

```
            if (input == 'a') return B;
```

```
            else if (input == 'b') return C;
```

```
            break;
```

```
        case B:
```

```
            if (input == 'a') return B;
```

```
            else if (input == 'b') return D;
```

```
            break;
```

```
        case C:
```

```
            if (input == 'a') return E;
```

```
            else if (input == 'b') return C;
```

```
            break;
```

```
        case E:
```

```
        if (input == 'a') return E;
        else if (input == 'b') return F;
        break;

    case F:
        if (input == 'a') return G;
        else if (input == 'b') return F;
        break;

    case G:
        if (input == 'a') return G;
        else if (input == 'b') return H;
        break;

    case H:
        return H;

    case D:
        return D;
    }
    return D;
}
```

```
int main() {
    string input;
    cout << "Enter input string: ";
    cin >> input;
```

```
State current = A;
```

```
for (char ch : input) {  
    current = transition(current, ch);  
}
```

```
if (current == H)  
    cout << "Accepted\n";  
else  
    cout << "Rejected\n";
```

```
return 0;  
}
```