

## Task-4

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**Experiment Name:** Write a C program that recognizes strings under the regular expression:  $a^*|a^*b^+|abb$

### Code:

```
#include<stdio.h>
#include<string.h>
int main(){

    char str[100];
    printf ("Enter a string (only with a and b ): ");
    gets(str);

    int length,i,state=0;

    length=strlen(str);

    for(i=0;i<length;i++){
        if(state==0 && str[i]=='a'){
            state=1;
        }
        else if(state==0 && str[i]=='b'){
            state=3;
        }
        else if (state==1 && str[i]=='a'){
            state=2;
        }
        else if (state==1 && str[i]=='b'){
            state=6;
        }
        else if (state==2 && str[i]=='a'){
            state=2;
        }
    }
```

```

}
else if (state==2 && str[i]=='b'){
state=3;
}
else if (state==3 && str[i]=='a'){
state=7;
}
else if (state==3 && str[i]=='b'){
state=4;
}
else if (state==4 && str[i]=='a'){
state=7;
}
else if (state==4 && str[i]=='b'){
state=4;
}
else if (state==5 && str[i]=='a'){
state=7;
}
else if (state==5 && str[i]=='b'){
state=4;
}
else if (state==6 && str[i]=='a'){
state=7;
}
else if (state==6 && str[i]=='b'){
state=5;
}
else if (state==7 && str[i]=='a'){
state=7;
}
else if (state==7 && str[i]=='b'){
state=7;
}
}
}

```

```

if(state==1||state==2||state==3||state==4||state==5||state==6){
printf("\n Accepted\n\n");
}
else{
printf("\n Rejected\n\n");
}

```

```

return 0;

```

}

## Output:

```
"E:\Mahmud\All Code\All Code\Compiler Code\recognizes.exe"
Enter a string (only with a and b ): a
    Accepted
Enter a string (only with a and b ): aa
    Accepted
Enter a string (only with a and b ): aaa
    Accepted
Enter a string (only with a and b ): b
    Accepted
Enter a string (only with a and b ): abbbbbbb
    Accepted
Enter a string (only with a and b ): abb
    Accepted
Enter a string (only with a and b ): abba
    Rejected
Enter a string (only with a and b ): ba
    Rejected
```