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GROUP:- D2
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BRANCH:- CSE DEPT.

ASSIGNMENT - 11

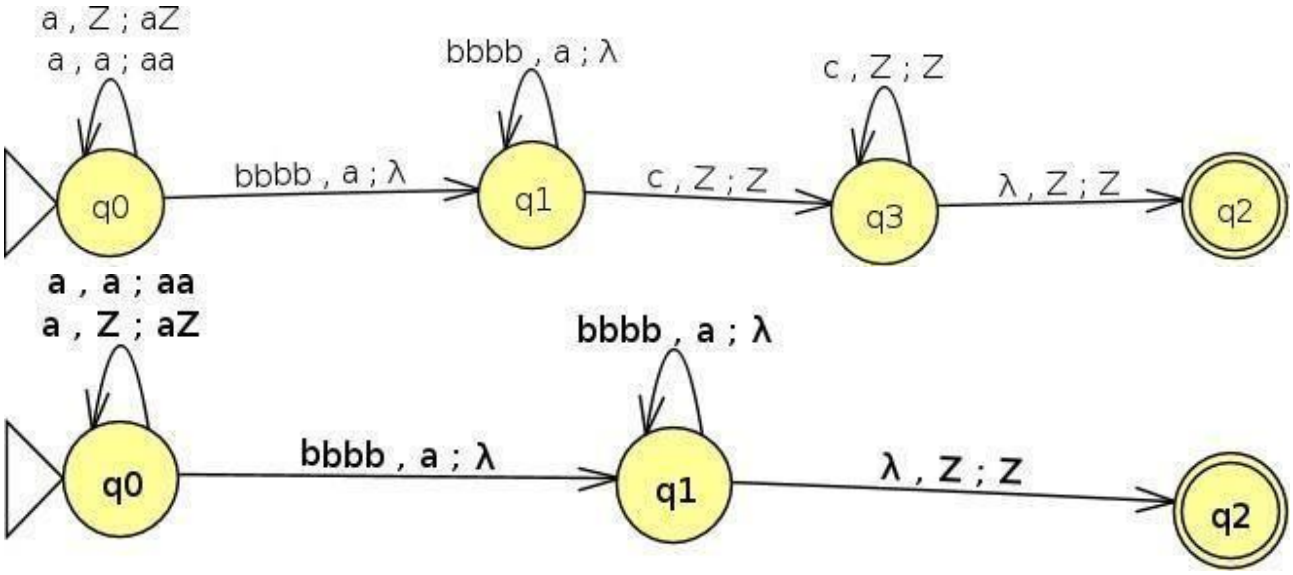
Q1. L={a^n b^4n c^m | m, n>=1}. Construct a PDA for the language L and write the program in C.

Q2. L= { a^n b^4n | n>=1 }. Construct a PDA for the language L and write the program in C.

```c
#include<stdio.h>
#include<stdbool.h>
#include<string.h>

bool a1b4cx(char str[]){
        int n=0,a=0;
        while(str[n]=='a'){
                n++;
                a++;
        }
        while(a!=0){
                a--;
                if(str[n]=='b' && str[n+1]=='b' && str[n+2]=='b' && str[n+3]=='b'){
                        n=n+4;
                        continue;
                }
                else return false;
        }

        if(str[n]=='c'){
                while(str[n]!='\0'){
                        if(str[n++]!='c'){
                                return false;
                        }
                }
                return true;
        }
        return false;
}
```

```
bool a1b4(char str[]){
        int n=0,a=0;
           while(str[n]=='a'){
                       n++;
                          a++;
                     }
        while(a!=0){
                a--;
                if(str[n]=='b' && str[n+1]=='b' && str[n+2]=='b' && str[n+3]=='b'){
                           n=n+4;
                              continue;
                          }
                             else return false;
                       }
        if(str[n]!='\0'){
                return false;
        }
        return true;
}

int main(){
        char str[20];
        printf("input:");
        scanf("%s",str);
        if(a1b4cx(str)){
                printf("part of L1\n");
        }
        else printf("not part of L1\n");

        if(a1b4(str)){
                printf("part of L3\n");
        }
        else printf("not part of L3\n");
        return 0;
}
```

PDA MACHINE-



3. L= { WCW_R | W ∈ $(0+1)^*$ }. Construct a PDA for the language L and write the program in C.

```c
#include<stdio.h>
#include<stdbool.h>
#include<string.h>

bool palindromeC(char str[]){
        int n=0;
        int len=strlen(str);
        while(str[n]!='C'){
                if(str[n]=='\0'){
                        printf("wrong type of input\nformat WCW^r\n");
                }
                if(str[n]!=str[len-1]){
                        return false;
                }
                n++;
                len--;
        }
        return true;
}

int main(){
        char str[20];
        printf("input:");
        scanf("%s",str);
        if(palindromeC(str)){
                printf("part of L2\n");
        }
        else printf("not part of L2\n");
        return 0;
}
```