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*SIMULATING PUSHDOWN AUTOMATA (0^N1^2N):*

*#include<stdio.h>*

*#include<string.h>*

*char stack[20];*

*int top,count=0;*

*int push()*

*{*

*top=top+1;*

*stack[top]='0';*

*stack[top+1]='\0';*

*}*

*int pop()*

*{*

*if(top<1)*

*return(0);*

*else*

*{*

*stack[top]='\0';*

*top=top-1;*

*return(1);*

*}*

*}*

*int main()*

*{*

*int m,i,j,k,l,a,len;*

*char input[20],rem\_input[20];*

*printf("Simulation of PDA for n 0's followed by 2n 1's\n");*

*printf("Enter a string : ");*

*scanf("%s",input);*

*l=strlen(input);*

*j=0;*

*stack[0]='Z';*

*top=0;*

*printf("Stack\tInput\n");*

*printf("%s\t%s\n",stack,input);*

*while(1)*

*{*

*len=strlen(input);*

*while(len>0)*

*{*

*if(input[0]=='0')*

*{*

*push();*

*m=0;*

*for(k=1;k<len;k++)*

*{*

*rem\_input[m]=input[k];*

*m=m+1;*

*}*

*rem\_input[m]='\0';*

*strcpy(input,rem\_input);*

*printf("%s\t%s\n",stack,input);*

*}*

*if(input[0]=='1')*

*{*

*count++;*

*if(count%2==0)*

*{*

*a=pop();*

*if(a==0)*

*{*

*printf("String not accepted");*

*goto b;*

*}*

*else*

*{*

*m=0;*

*for(k=1;k<len;k++)*

*{*

*rem\_input[m]=input[k];*

*m=m+1;*

*}*

*}*

*rem\_input[m]='\0';*

*strcpy(input,rem\_input);*

*printf("%s\t%s\n",stack,input);*

*} else {*

*m=0;*

*for(k=1;k<len;k++)*

*{*

*rem\_input[m]=input[k];*

*m=m+1;*

*}*

*rem\_input[m]='\0';*

*strcpy(input,rem\_input);*

*printf("%s\t%s\n",stack,input);*

*}*

*}*

*break;*

*}*

*j=j+1;*

*if(j==l)*

*{ break;*

*}*

*}*

*if(top>=1)*

*{*

*printf("String not accepted");*

*} else*

*{*

*printf("String accepted");*

*} b:*

*printf(".............");*

*}*

A screenshot of a computer

Description automatically generated