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11° Aula prática

Uberlândia

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1.Código fonte:

#include <stdio.h>

#include <stdlib.h>

#include "list.h"

#include "stack.h"

#include <string.h>

static void print\_stack(const Stack \*stack) {

ListElmt \*element;

int \*data, size,i;

fprintf(stdout, "Stack size is %d\n", size = stack\_size(stack));

i = 0;

element = list\_head(stack);

while (i < size) {

data = list\_data(element);

fprintf(stdout, "stack[%03d]=%03d\n", i, \*data);

element = list\_next(element);

i++;

}

return;

}

int Prioridade(char c, char t){

int pc,pt;

if(c == '\*' || c == '/')

pc = 2;

if(c == '+' || c == '-')

pc = 1;

if(c == '(')

pc = 4;

if(t == '\*' || t == '/')

pt = 2;

if(t == '+' || t == '-')

pt = 1;

if(t == '(')

pt = 0;

return (pc > pt);

}

int main(int argc, char \*\*argv) {

Stack stack;

int i,j=0;

stack\_init(&stack, free);

printf("Digite a operacao para transformar em posfixa:\n");

char op[100],posop[100], \*a;;

setbuf(stdin,NULL);

gets(op);

char\* data = (char \*)malloc(sizeof(char));

for (i = 0; i < strlen(op); i++) {

if(op[i]>=40&&op[i]<=57&&op[i]!=44&&op[i]!=46){

if(op[i]>=48&&op[i]<=57&&op[i]){

posop[j]=op[i];

j++;

}

if(op[i]=='+'||op[i]=='\*'||op[i]=='-'||op[i]=='/'){

while(1){

a = stack\_peek(&stack);

if((a = stack\_peek(&stack))==NULL){

stack\_push(&stack, &(op[i]));

break;

}else{

if(Prioridade(op[i],a[0])){

stack\_push(&stack, &(op[i]));

break;

}

else{

posop[j]=\*((char\*)(stack.head->data));

stack\_pop(&stack,(void\*)&data);

j++;

}

}

}

}

if(op[i]=='(')

stack\_push(&stack, &(op[i]));

if(op[i] == ')'){

while(\*(a = stack\_peek(&stack))!='('){

if(op[i] != '('){

posop[j]=\*((char\*)(stack.head->data));

j++;

stack\_pop(&stack,(void\*)&data);

}

}

stack\_pop(&stack,(void\*)&data);

}

}else{

puts("operacao incorreta, digite uma operacao valida.");

return -1;

}

}

while((a = stack\_peek(&stack))!=NULL){

posop[j]=\*a;

j++;

stack\_pop(&stack,(void\*)&data);

}

posop[j]='\0';

stack\_destroy(&stack);

printf("%s\n",posop);

return 0;

}

2.Print do funcionamento:

