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| #include "list.h"  #include<iostream>  using namespace std;  int main()  {  list l;  int c;  char x, y;  do  {  cout << endl  <<"## MENU ##" << endl  << "1: push" << endl  << "2: pop" << endl  << "3: isEmpty" << endl  << "4: isfull" << endl  << "5: total of stack" << endl  << "6: exit" << endl  << "enter your choice: ";  cin >> c;  switch (c)  {  case 1:  {  l.push();  break;  }  case 2:  {  x = l.pop();  if (x != '0')  {  cout << "now we are on last current node" << endl;  cout << "now the character is: " << x << endl;  }  break;  }  case 3:  {  if (l.isempty())  {  cout << "list is empty " << endl;  }  else  {  cout << "list is not empty" << endl;  }  break;  }  case 4:  {  if (l.isfull())  {  cout << "list is full" << endl;  }  else  {  cout << "list is not full" << endl;  }  break;  }  case 5:  {  y = l.tos();  if (y != '0')  {  cout << "the top of stack is :" << y << endl;  }  break;  }  case 6:  {  l.exit();  break;  }  }  } while (c != 6);  system("pause");  return 0;  }  void list::push()  {  if (top <= (max - 1))  {  char x;  if (size == 0)  {  create();  cout << "enter the no of characters you want to enter: ";  cin >> size;  if (size < max)  {  for (int i = 1; i <= size; i++)  {  cout << "enter the " << i << " character :";  cin >> x;  a[++top] = x;  }  }  else  {  cout << "size must be smaller than maximum array numbers" << endl;  }  }  else  {  if (size < max)  {  cout << "enter the character :";  cin >> x;  a[++top] = x;  size++;  }  else  {  cout << "list is already full" << endl;  }  }  }  else  {  cout << "list is full already" << endl;  }  }  void list::create()  {  cout << "enter the maximum values you want to enter: ";  cin >> max;  a = new char[max];  }  void list::deallocate()  {  if (max != 0)  {  if ((top == -1) || (size == 0))  {  delete[]a;  }  else  {  cout << "list is empty" << endl;  }  }  else  {  cout << "list has not been created" << endl;  }  }  char list::pop()  {  if ((max != 0) || (top != -1) || (size != 0))  {  if (top != (max))  {  size--;  return a[top--];  }  else  {  cout << "list is full so you cannot deal with more values" << endl;  }  }  else  {  cout << "list has not been created" << endl;  }  }  bool list::isempty()  {  if (max != 0)  {  if ((top == -1) || (size == 0))  {  return true;  }  else  {  return false;  }  }  else  {  cout << "list has not been created" << endl;  }  }  bool list::isfull()  {  if (max != 0)  {  if ((top != -1) || (size != 0))  {  if (top == (max - 1))  {  return true;  }  else  {  return false;  }  }  else  cout << "list is empty" << endl;  }  else  {  cout << "list has not been created" << endl;  }  }  char list::tos()  {  if (max != 0)  {  if ((top != -1) || (size != 0))  {  cout << "total of stack is: " << size << endl;  return a[top];  }  else  {  cout << "list is empty" << endl;  }  }  else  {  cout << "list has not been created" << endl;  }  }  void list::exit()  {  deallocate();  cout << "program ended" << endl;  } |

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| #pragma once  #include<iostream>  using namespace std;  class list  {  char \*a;  int top;  int max;  int size;  public:  list()  {  a = nullptr;  top = -1;  max = 0;  size = 0;  }  ~list()  {  }  void push();  void create();  char pop();  bool isempty();  bool isfull();  char tos();  void deallocate();  void exit();  }; |

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