#include <iostream>

#include <vector>

#include <list>

#include <queue>

#include <stack>

using namespace std;

void vectorDemo() {

vector<int> v;

int choice, val;

do {

cout << "\n-- Vector Menu --\n1. Push Back\n2. Pop Back\n3. Display\n4. Exit\nChoice: ";

cin >> choice;

switch (choice) {

case 1:

cout << "Enter value: ";

cin >> val;

v.push\_back(val);

break;

case 2:

if (!v.empty()) {

v.pop\_back();

}

else {

cout << "Vector is empty.\n";

}

break;

case 3:

for (int i : v) cout << i << " ";

cout << endl;

break;

}

} while (choice != 4);

}

void listDemo() {

list<int> l;

int choice, val;

do {

cout << "\n-- List Menu --\n1. Push Front\n2. Push Back\n3. Pop Front\n4. Pop Back\n5. Display\n6. Exit\nChoice: ";

cin >> choice;

switch (choice) {

case 1:

cout << "Enter value: ";

cin >> val;

l.push\_front(val);

break;

case 2:

cout << "Enter value: ";

cin >> val;

l.push\_back(val);

break;

case 3:

if (!l.empty()) l.pop\_front();

else cout << "List is empty.\n";

break;

case 4:

if (!l.empty()) l.pop\_back();

else cout << "List is empty.\n";

break;

case 5:

for (int i : l) cout << i << " ";

cout << endl;

break;

}

} while (choice != 6);

}

void queueDemo() {

queue<int> q;

int choice, val;

do {

cout << "\n-- Queue Menu --\n1. Enqueue\n2. Dequeue\n3. Front\n4. Display\n5. Exit\nChoice: ";

cin >> choice;

switch (choice) {

case 1:

cout << "Enter value: ";

cin >> val;

q.push(val);

break;

case 2:

if (!q.empty()) q.pop();

else cout << "Queue is empty.\n";

break;

case 3:

if (!q.empty()) cout << "Front: " << q.front() << endl;

else cout << "Queue is empty.\n";

break;

case 4:

{

queue<int> temp = q;

while (!temp.empty()) {

cout << temp.front() << " ";

temp.pop();

}

cout << endl;

}

break;

}

} while (choice != 5);

}

void stackDemo() {

stack<int> s;

int choice, val;

do {

cout << "\n-- Stack Menu --\n1. Push\n2. Pop\n3. Top\n4. Display\n5. Exit\nChoice: ";

cin >> choice;

switch (choice) {

case 1:

cout << "Enter value: ";

cin >> val;

s.push(val);

break;

case 2:

if (!s.empty()) s.pop();

else cout << "Stack is empty.\n";

break;

case 3:

if (!s.empty()) cout << "Top: " << s.top() << endl;

else cout << "Stack is empty.\n";

break;

case 4:

{

stack<int> temp = s;

while (!temp.empty()) {

cout << temp.top() << " ";

temp.pop();

}

cout << endl;

}

break;

}

} while (choice != 5);

}

int main() {

int choice;

do {

cout << "\n== STL Practice Menu ==\n1. Vector\n2. List\n3. Queue\n4. Stack\n5. Exit\nChoose container to practice: ";

cin >> choice;

switch (choice) {

case 1: vectorDemo(); break;

case 2: listDemo(); break;

case 3: queueDemo(); break;

case 4: stackDemo(); break;

}

} while (choice != 5);

cout << "Practice session ended. Good job!\n";

return 0;

}

#include<iostream>

#include<list>

#include<vector>

#include<stack>

#include<queue>

using namespace std;

void vectmenu() {

vector<int> v;

int ch;

do {

cout << " --- Vector Functions Menu ---" << endl;

cout << "1) Insert(end)\n2) Delete(end)\n3)Display\n4) Quit" << endl;

cout << "Enter Choice: ";

cin >> ch;

switch (ch) {

case 1:

int n;

cout << "Enter number u wanna add: ";

cin >> n;

v.push\_back(n);

cout<<n<<" has been added to the end of the vector\n";

break;

case 2:

v.pop\_back();

cout << "The end element has been removed\n";

break;

case 3:

for (auto it = v.begin(); it != v.end(); it++) {

cout << \*it << " ";

}

cout << "These are all the elemets present in the vector\n";

}

cout << endl;

} while (ch != 4);

cout << "Hope you understand vectors now :)" << endl;

}

void listmenu() {

list<int> l;

int ch;

do {

cout << " --- Vector Functions Menu ---" << endl;

cout << "1) Insert(end)\n2) Delete(end)\n3)Display\n4) Quit" << endl;

cout << "Enter Choice: ";

cin >> ch;

switch (ch) {

case 1:

int n;

cout << "Enter number u wanna add: ";

cin >> n;

v.push\_back(n);

cout << n << " has been added to the end of the vector\n";

break;

case 2:

v.pop\_back();

cout << "The end element has been removed\n";

break;

case 3:

for (auto it = v.begin(); it != v.end(); it++) {

cout << \*it << " ";

}

cout << "These are all the elemets present in the vector\n";

}

cout << endl;

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int ch;

do {

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cout << "1) Insert(end)\n2) Delete(end)\n3)Display\n4) Quit" << endl;

cout << "Enter Choice: ";

cin >> ch;

switch (ch) {

case 1:

int n;

cout << "Enter number u wanna add: ";

cin >> n;

v.push\_back(n);

cout << n << " has been added to the end of the vector\n";

break;

case 2:

v.pop\_back();

cout << "The end element has been removed\n";

break;

case 3:

for (auto it = v.begin(); it != v.end(); it++) {

cout << \*it << " ";

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vector<int> v;

int ch;

do {

cout << " --- Vector Functions Menu ---" << endl;

cout << "1) Insert(end)\n2) Delete(end)\n3)Display\n4) Quit" << endl;

cout << "Enter Choice: ";

cin >> ch;

switch (ch) {

case 1:

int n;

cout << "Enter number u wanna add: ";

cin >> n;

v.push\_back(n);

cout << n << " has been added to the end of the vector\n";

break;

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v.pop\_back();

cout << "The end element has been removed\n";

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case 3:

for (auto it = v.begin(); it != v.end(); it++) {

cout << \*it << " ";

}

cout << "These are all the elemets present in the vector\n";

}

cout << endl;

} while (ch != 4);

cout << "Hope you understand vectors now :)" << endl;

}

int main() {

int ch;

cout << "== Choose A Container Type ==" << endl;

cout << "\n1) Vector\n2) List\n3) Stack\n4) Queue\n";

cout << "enter choice: " << endl;

cin >> ch;

switch (ch) {

case 1: vectmenu();

case 2:

}

return 0;

}