

Software Design
STL Trace Code worksheet #1

Name –

DO NOT USE THE COMPUTER, C++ COMPILER, OR THE INTERNET FOR HELP WITH THESE EXERCISES. SHOW SCRATCHWORK ON THIS PAPER.

For each of the following questions assume that statements

```
vector<int> myvector;  
int sum;
```

have been executed. Also assume any user input is 2 followed by 1. Write the output from each.

```
//1  
sum = 0;  
for (int i = 1; i <= 9; i++)  
    myvector.push_back(i);  
  
while (!myvector.empty())  
{  
    sum += myvector.back();  
    myvector.pop_back();  
}  
  
cout << "total: " << sum << endl;  
myvector.clear();
```

```
//2  
vector<int> myints;  
cout << "0. size: " << (int) myints.size() << endl;  
  
for (int i = 0; i < 9; i++)  
    myints.push_back(i);  
cout << "1. size: " << (int) myints.size() << endl;  
  
myints.insert(myints.end(), 9, 10);  
cout << "2. size: " << (int) myints.size() << endl;  
  
myints.pop_back();  
myints.pop_back();  
cout << "3. size: " << (int) myints.size() << endl;  
myints.clear();
```

```
//3  
myvector.push_back(2);  
myvector.push_back(3);  
  
myvector.front() -= myvector.back();  
  
cout << "myvector.front() is now " << myvector.front() << endl;  
myvector.clear();
```

```
//4  
myvector.push_back(9);  
  
while (myvector.back() != 0)  
{
```

```

    myvector.push_back(myvector.back() - 1);
}

cout << "myvector contains:";

for (int i = 0; i < myvector.size(); i++)
    cout << " " << myvector[i];

cout << endl;
myvector.clear();

//5
int myint;

cout << "Please enter some integers (enter 1 to end):\n";

do
{
    cin >> myint;
    myvector.push_back(myint);
} while (myint != 1);

cout << "myvector stores " << (int) myvector.size() << " numbers.\n";
myvector.clear();

//6
sum = 0;
myvector.push_back(10);
myvector.push_back(20);
myvector.push_back(30);

while (!myvector.empty())
{
    sum += myvector.back();
    myvector.pop_back();
}

cout << "The elements of myvector summed " << sum << endl;
myvector.clear();

//7
myvector.push_back(8);

cout << "myvector contains:";

for (int i = 0; i < myvector.size(); i++)
    cout << " " << myvector[i];

cout << endl;
myvector.clear();

//8
sum = 0;

for (int i = 1; i <= 8; i++)
    myvector.push_back(i);

```

```
while (!myvector.empty())
{
    sum += myvector.back();
    myvector.pop_back();
}

cout << "total: " << sum << endl;
myvector.clear();

//9
myvector.push_back(10);
myvector.push_back(20);
myvector.push_back(30);

cout << "myvector contains:";

for (int i = 0; i < myvector.size(); i++)
    cout << " " << myvector[i];

myvector.clear();
myvector.push_back(111);
myvector.push_back(222);

cout << "\nmyvector contains:";

for (i = 0; i < myvector.size(); i++)
    cout << " " << myvector[i];

cout << endl;
myvector.clear();

//10
myvector.push_back(9);

cout << "myvector contains:";

for (int i = 0; i < myvector.size(); i++)
    cout << " " << myvector[i];

cout << endl;
myvector.clear();
```