COIS 2040 Lab 5

Part 1 – Pointers

Step 3

```
string pString = "The cat jumps";

char *p = &pString[0];

cout << p  // Prints the string from the address pointed by 'p' until '\0'

cout << *p // Prints the character at the memory address pointed by 'p'
```

Step 4

```
for (int i = 0; i < pString.length(); i++)

{

   if (pString[i] == ' ')

   {

       pString[i] = '0';

   }

   cout << pString[i];

}

// Output: The0cat0jumps
```

Part 2 – Dynamic Arrays

Step 2

```
myList.pop_back();

for (auto& val : myList)

{

   cout << val;

}
```

Step 6

```
int main()
{
    vector<string> freezer = {"Chocolate", "Vanilla", "Strawberry", "Caramel", "Banana"};
    if (freezer.empty())
    {
        cout << "No ice cream in the freezer" << endl;
    }
    else if (freezer.size() == 4)
    {
        cout << "The fourth flavor in the freezer is: " << freezer[4] << endl;
    }
    else
    {
        cout << "There are " << freezer.size() << " flavors of ice cream in the freezer." << endl;
    }
}
```

```
Run    Lab5 ×

/home/onel/git/COIS2040/Lab5/cmake-build-debug/Lab5
There are 5 flavors of ice cream in the freezer.

Process finished with exit code 0
```

Step 9

```cpp
#include <iostream>
#include <string>
#include <vector>

using namespace std;

int main()
{
   //vector<string> freezer = {"Chocolate", "Vanilla", "Strawberry", "Caramel", "Banana"};
   vector<string> freezer;
   string flavor;
   int count = 0;
   cout << "(Type done to finish)" << endl;
   cout << "Enter ice cream flavors:\n" << endl;
   do
   {
       cout << count + 1 << ": ";
       getline(cin, flavor);
       if (flavor.find_first_not_of(' ') != string::npos && flavor != "done")
       {
           freezer.push_back(flavor);
           count++;
       }
   }
   while (flavor != "done");

   if (freezer.empty())
   {
       cout << "No ice cream in the freezer" << endl;
   }
   else if (freezer.size() == 4)
   {
       cout << "The fourth flavor in the freezer is: " << freezer[3] << endl;
   }
   else
   {
       cout << "\nThere are " << freezer.size() + 1 << " flavors of ice cream in the freezer." << endl;
   }
}
```

```
(Type done to finish)
Enter ice cream flavors:

1:
1:
1:
1: done
No ice cream in the freezer
```

```
(Type done to finish)
Enter ice cream flavors:

1: one
2: two
3: three
4: four
5: done
The fourth flavor in the freezer is: four
```

```
(Type done to finish)
Enter ice cream flavors:

1: a
2: b
3: c
4: d
5: e
6: f
7: g
8: done

There are 8 flavors of ice cream in the freezer.
```