

# SQA Assignment 4 - Fall 2020

**Due: 11:59PM, Tuesday, October 13, Submit through Canvas**

**Questions?** Contact TA Xiaopu Peng <xzp0007@auburn.edu>

## Problem Descriptions:

The purpose of this assignment is to reinforce the lecture material on program slice. For each of the source code fragments below, list the program slice for the variable indicated. (include the braces to make sure the program is executable.) Each problem is worth 50 points.

### Problem 1:

For the following program, list the program slice by ONLY USING LINE NUMBERS for “type” in statement 18.

```
1      #include <iostream>
2      using namespace std;
3      int main() {
4          int type;
5          int lowVowel;
6          int upperVowel;
7          char c;
8          cout << "Enter an alphabet: ";
9          cin >> c;
10         lowVowel = (c == 'a' || c == 'e' || c == 'i' || c == 'o' || c == 'u');
11         upperVowel = (c == 'A' || c == 'E' || c == 'I' || c == 'O' || c == 'U');
12         if (lowVowel || upperVowel) {
13             cout << c << " is a vowel.";
14         }
15         else {
16             cout << c << " is a consonant.";
17         }
18         if (lowVowel) type = 1;
19         if (upperVowel) type = 2;
20         return 0;
21     }
```

## Problem 2:

For the following program, list the program slice by ONLY USING LINE NUMBERS for “countn” in statement 22.

```
1      #include<iostream.h>
2      void main(){
3          int countp=0;
4          int countn=0;
5          int countz=0;
6          int arr[10];
7          for(i=0; i<10; i++) {
8              cin>>arr[i];
9          }
10         for(i=0; i<10; i++){
11             if(arr[i]<0){
12                 countn++;
13             }
14             if(arr[i]==0){
15                 countz++;
16             }
17             if(arr[i]>0){
18                 countp++;
19             }
20         }
21         cout<<"Positive Numbers = "<<countp<<"\n";
22         cout<<"Negative Numbers = "<<countn<<"\n";
23         cout<<"Zero = "<<countz<<"\n";
24     }
```