

CS 162 Worksheet 10

Templates:

1. Given the following outline of code, use the vector class from the STL to add a new integer, 10, to a vector of integers, v.

```
#include<iostream>
#include<vector>

using namespace std;

int main(){

}

}
```

2. How would you create a templated class called dynarray and provide the same functionality as push_back() in the vector templated class from the STL?

```
template<class element>
class dynarray {
    private:
        element *a;
        int size;
    public:
        void add(const element &item);
};

template<class element>
dynarray<element>::add(const element &item){

}

}
```

3. Now, write code/pseudocode that has the functionality of adding the element to the front in this class.

Linked List

1. What is a singly linked list? Draw a picture of it.

2. What would a doubly linked list and circular linked list look like?

Compare and contrast: Singly Linked List vs. Array

3. How are memory assigned for both data structures? Contiguous vs. non-contiguous?

4. In order to store the same amount of elements (e.g., 100 integers), which data structure would consume more memory and why?

5. Advantage(s) of linked list over array:

6. Drawbacks of linked list:

