

There are several ways to implement a stack of integers. Here is one representation, using an array:

```
class IntStack {
public:
    ...
private:
    int capacity;           // number of elements in the dynamically allocated array items
    int * items;            // integers in the stack are stored in items[0..size-1]
    int size;               // items[size-1] is the integer on the top of the stack
};
```

1. Give an implementation of the pop operation for class IntStack. Recall that pop removes the topmost item from the stack and returns a copy of it.

```
// Remove topmost element from this stack and return a copy of it
int IntStack::pop( ) {
```

```
}
```

2. In lecture, we developed two implementations of a stack: one using arrays (as in question 1), and the other using a linked list. If it were important for a particular application that the push and pop operations be as fast as possible, which implementation would you use, and why? (Be brief)

3. What is the essential difference between a stack and a queue?