Exam 1.1

🐰

*This is a cover page*

*There is nothing important on here*

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*This isn’t an Easter thing, I just like bunnies. Here are some cats too.*

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*And some cool stuff*

🦂🦖👾

On a separate piece of paper, write the header file for a **Linked-List based Stack**. Call it **ListStack**. Title the page **ListStack.h**. Include all data members and methods that such a class should have.

On some other papers, implement the following methods of **ListStack**:

* **Push** adds a new item to the stack
* **Pop** removes an item from the stack and returns its data
* **Destructor** de-allocates all memory used by the stack

You may assume the following methods are already implemented and working (They must still appear in your .h):

* **Constructor** initializes empty stack where top points to nothing
* **Empty** returns true if the stack is empty

Label these pages **ListStack.cpp**

Your stack should store data of type **char.** Assume the following class declaration exists for a type called **Node** and that the Node constructor is implemented.

**class** Node{

**public**:

Node(**char** d, Node\* n = **nullptr**);

**char** data;

Node\* down;

};

**Attach first ListStack.h and then ListStack.cpp to the back of this exam. (If using the graph paper provided, you may simply leave it attached)**

For the following multiple-choice questions, choose the **most correct** answer. (If there are multiple that are technically correct, but one answers the question better, choose the latter)

**Scope** is a term which refers to:   
 a. The context in which an identifier can be seen and continues  
 to exist.  
 b. The function a variable is declared in  
 c. Whether a variable in a class can be accessed with  
 the dot operator

The **scope resolution operator ::** does what?

1. Specifies the name of a variable
2. Defines a method outside of a class
3. Changes the scope of a method
4. Specifies the namespace an identifier exists in
5. idk I slept through that part

**Object Oriented Programming** is a programming paradigm which specifies that:

1. Classes should contain methods that affect their data members
2. Operations should be grouped with the data that they operate on
3. Programmers should emphasize the production of object code over libraries

The **prototype** of a constructor **does not** include…?

1. parameters
2. an identifier
3. a return type

To **overload** a function/method is to create another function with the same **identifier** but…?

1. a different return type
2. a different body
3. different parameters
4. in a different file

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