Second Quiz – Part B

In this part you are required to answer one question. You may begin this part only after you completed and submitted the first part of the quiz. It is advisable, though not required, to do the programming in Visual Studio.

You are not allowed to get help from any source (neither digital, nor written, nor human!).

Submission deadline is **9:50**. It is advised to spend no more than 30 minutes solving the question and submit at the end of 30 minutes (at 9:40) to allow 10 minutes for submission, in case of technical difficulties.

The submission format for this question is similar to that of the homework. Make sure to separate your code correctly into files and submit all the relevant files. During the quiz there will be no automatic evaluation.

In a drink factory cans are sold in crates. In each crate up to 100 cans of different types are stored – all produced by the same manufacturer.

Declare and implement a class called Pack that contains information about a single crate.

The fields in the class are:

- The size of the crate – the number of cans being stored in it.
- An array of the names of the cans stored in the crate (each name of type string).

Add to the class at least the following methods:

- constructor – a constructor that receives one arguments (the number of cans in the crate) and initializes the object accordingly. If the provided argument is greater than 100 the size of the crate is to be initialized to 100.
- destructor – a destructor.
  The destructor must include the following statement:

```
cout << "In destructor" << endl;
```

  So that the destructor will print In destructor.
- operator>> – inputs the names of the cans in the crate (the size. was already received in the constructor).
- operator<< – outputs the number of cans followed by their names. The output is to be done in the format of the following example.
  Example: Given a crate with 3 cans Coke, Zero and Sprite, the output will be:

```
Amount : 3
Cans : Coke Zero Sprite
```

- operator+ - copies the content of two crates into a third crate. The order is important: First the cans from the calling object (left operand) are copied and only after that the cans from the argument object (right operand) are copied.
  In the case that the combined sizes of the two crates exceeds 100 the exception “ERROR” is to be thrown and the third crate is not created.

Note: More methods may be added as necessary.

The following main program is provided to test your code. It is mandatory to include this main program in your submission, exactly as provided – you are not allowed to make any changes!!

```
int main() {
	Pack pack1(3);
	Pack pack2(8);
	Pack pack3(0);
	cin >> pack1;
	cin >> pack2;
	try {
		pack3 = pack1 + pack2;
	}
	catch (const char * message) {
		cout << message << endl;
	}
	cout << pack3;
	return 0;
}
```

The complete code must be submitted in the submission box *Midterm Part B* before **9:50**, therefore it is highly advised to submit your solution earlier.

At 9:50 a second submission box will open for late submissions. It will close at 9:55 and any submission to that box will have a grade reduction of 10%.

At 9:55 a third submission box will open for late submissions. It will close at 10:00 and any submission to that box will have a grade reduction of 25%.

After 10:00 no more submissions will be accepted.

Good Luck!