

# Lab 13 – Protocol Buffers

Assigned 11/24/09

Points: 20

## **Purpose**

The purpose is to learn how to use Google Protocol Buffers using Java.

## **Lab Description**

Use Google Protocol Buffers to serialize information about the items found in our Zork type game. The items structure will have the following characteristics:

### **Item Message**

Field	Modifiers	Data Type
name	Required	String
weight	Optional	Integer
canPickup	Optional	Boolean
message	Repeated	DisplayMessage

### **DisplayMessage Message**

Field	Modifiers	Data Type
message	Required	String
type	Optional	Enumeration: PICKUP DROP CANNOTPICKUP

### **Items Message**

Field	Modifiers	Data Type
item	Repeated	Item

Create a program that will accept the following commands:

- Serialize: Will write 2 or more items to a file of the user's choice
- Read – Will read and display items from a file of the user's choice
- Quit – Terminate the application

The output should appear similar to the following:

```
Google Protocol Buffers

Enter a command: Serialize
Enter File Name: Zork.dat

Enter a command: Read
Enter File Name: Zork.dat

Name: Axe
Weight: 45
Can Pickup: true
Message Type: PICKUP
Message: This is a great axe!

Name: Bottle
Weight: 12
Message Type: PICKUP
Message: This is good stuff!
Message Type: DROP
Message: That was good stuff!

Enter a command: Quit
That's all folks!
```

Your generated Java files will need to be moved into your Eclipse project. This can be done by dragging the Java file from Window Explorer in to the appropriate package in your application. This file will use classes found in the com.google package. This package (proto.jar) can be found on the common drive under Lab 13 and must be added to your application's build path.

Turn in a copy of the program and sample output.