**CSE113     Introduction to Computer Science                     Spring 2013**
**Lab 1**

**Objective: To learn to use Greenfoot development environment and to get started with Java program development.**

*Requirement*: For this assignment you will be setting up your environment, and learn to create and submit a Java Program.

**Setup**:
Your first task is to download and install and test Greenfoot  on your machine.
i) Download and Install JDK :
- Go to http://www.oracle.com/technetwork/java/javase/downloads/index.html
- Download the latest version of JDK depending on the operating system you have on your machine.
- Run the installer that you have downloaded and follow the instructions to install JDK. It will also install the Java Runtime Environment ( JRE ) required by Greenfoot.

ii) Download and Install Greenfoot
- Go to http://www.greenfoot.org/download
- Download the Greenfoot API depending on the operating system you have on your machine.
- Run the installer that you have downloaded and follow the instructions to install Greenfoot.

iii) Download book scenarios:

- Go to http://www.greenfoot.org/book
- Under "For Students" section, you will find a link to download the book scenarios. Download and save the zipped scenario in the folder created above. Extract the book-scenarios.zip file in the folder created above. The zip file contains a directory named book-scenarios, and inside that will be directories for all the chapters of the book.

iv) Set up a directory on your machine/laptop for you to store your CSE 113 work. Create a folder somewhere preferable and name this folder CSE 113. You will put all your work for CSE 113 in this folder.  This allows you to keep copying the original scenarios for practice and learning again and again.

**First Greenfoot Scenario**

Go to start menu on your computer/laptop, search for Greenfoot and click on it. You will see the splash screen and then Greenfoot will start up. Greenfoot operates using scenarios. Scenarios give us a base to work with when programming in Greenfoot.

**Problem 1:** Using the Scenario->Open menu browse to the directory for chapter01 and inside there select asteroids1 project to open the asteroids scenario. You will see a bunch of classes on right hand side. Create a Rocket object and place it in the world. Create some asteroids and place them in the world as well. Play with the scenario and observe what happens when you click act and run button. Observe what happens when you press space bar, the rocket fires. Open the source code for rocket and search for the term gunReloadTime. You will see it is assigned a value of 20. Change the value to 4 and

compile the scenario. Observe what happens when you run the scenario.  (You can check instructions to Create objects, Access the source code, compile and run the scenario in the Greenfoot book Chapter 1.)

Next change the size of the default asteroid to 100 instead of 64. You will have to edit the source code. Save the change, run the scenario.  Get help from the TA in the recitation if you have difficulty with this step. **Add your name, TA name, and section name as a comment on the Asteroids code using edit code.**

**Problem 2:**  Open the Wonbat world scenario and save it in your cse113 directory. Now change the Wombat code so that it sweeps every square eating the leaves. Your TA will instruct you on where and how to add this code. Compile, debug and make sure it works as expected.
**Add your name, TA name, and section name as a comment on the Wombat code.**

### Zip up a scenario
Before you submit an assignment, you will need to zip up the contents of the scenario directory. Let's practice zipping at this time. In the file explorer, right click and select to archive the directory containing the asteroids1 scenario. Leave the name of the Archive to be the same as the name of the directory. After you have completed the zipping procedure, you should see the zip file in your directory as well as the scenario directory itself.  Please ask the TA in the recitation to help you with this. Make sure they demonstrate how to do this.

### Submitting the Assignment
You will submit the zipped up version of the asteroids1 scenario through UBLearns. Go to UBLearns and login using your UBIT name and password. You will see the assignments accepting files under the Assignment link. Submit your zipped file under Lab1. Submit another zip file for the updated Wombatworld scenario. As you may have guessed, this lab is designed to get you familiar with the Greenfoot and how to do the basic tasks you will be required to do to finish assignments for the rest of the summer.

### Time allocated for the lab and grading process
1. You will be given two weeks to work on the labs assigned. Once you complete your work can show your completed work to TA. He will then assign a grade for the lab based on the work and the online submission.
2. You will start working on the lab 1 assigned as above, the week of 1/28, (before), during and (after) recitation. You have the time until your next recitation or the deadline to complete the work. You may attend more than one recitation per week.
3. TA will instruct you on the lab and demo the lab in the first half of the recitation time.
4. You can work on the lab and complete it at your pace.
5. If you complete the lab assigned within the lab hours (about 2 hours), you can submit it on ublearns. TA will start grading the lab the next week of recitation.
6. If you cannot complete the lab within the lab time assigned you can come back to the lab at other recitation times or work on it outside the lab.
7. The lab is located at 340 Bell. Lab machines have Greenfoot installed.
8. You can get your lab graded by your TA during the recitation in the second hour of the recitation.