**Exercise 2:**

Write a Pintool (in JIT mode) that prints into a file called “**rtn-output.txt**” the edge profiling of the Dynamic Control Flow Graph (CFG) in each routine (RTN).

No need to collect edge profiling for indirect jumps.

The profiling information should be persistent and saved into a file called “**\_\_profile.map**”.

Repeated runs of the pintool will accumulate the profiling information from previous runs.

The pintool should be named “**ex2.so”**.

For each routine (RTN), the tool should emit the following information, in this exact format:

“<routine1 name>” “at: “ <RTN address> “icount: “ <instructions count of the routine>

BB1: <from address> - <until address>

BB2: <from address> - <until address>

…

BBn: <from address> - <until address>

Edge0: BBx 🡪 BBy <edge count>

Edge1: BBx 🡪 BBy <edge count>

…

Edgen: BBx 🡪 BBy <edge count>

“<routine2 name>:” <RTN address> icount: <instructions count of the routine>

….

The above routines list should be ordered according to highest icount down to lowest icount.

You can assume that the total number of routines is no larger than 1000.

**Comment**  
For edges that cross 2 RTN’s, you should omit that edge from the output.

**Test your pintool:**

In the moodle you’ll find the input binary file called “**bzip2.gz**” along with an input file to give it called “**input.txt.gz.**

Ftp the files to your T2 Linux account and open them using the **gunzip** command.

To run it simply type: $ **./bzip2 –k –f input.txt**

This will compress the file **input.txt** and generate a new file **input.txt.bz2**

To test your pintool on the above **bzip2** binary file, simply type:

**<pindir>/pin –t ex1.so -- ./bzip2 –k –f input.txt**

**Submission requirements:**

The submission of this exercise is **in pairs** **only**.

Submit 1 compressed file called **“ex2.zip”** into the moodle exercise2 [link](https://moodle.technion.ac.il/mod/assign/view.php?id=451146) containing the following files:

1. The binary of your pintool **ex2.so** (compiled, and tested by you that it runs and gives the result).
2. A directory called: ‘src’ containing all the sources of your pintool along with a REDAME.txt file that describes the compilation command and how to run the tool.

**Submission deadline: midnight Thursday May 21, 2017.**