

LAB #10

LOOPY CONVERSIONS

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October 11-12, 2004

This lab should be completed during the scheduled lab sessions. In order to complete this lab you must demonstrate programs to your lab TA. The technical knowledge on how to accomplish these tasks is found in the assigned reading or the lecture notes, but the lab TA will help as well.

1. Write a JAVA application that reads in positive integers. The "main" method should contain a while loop that prompts the user for a positive number. (Feel free to copy and modify the "myGetDouble" code from lecture #8.) If the user types in a negative number, or a string that is not a number, the program ends. The program should take the number and print out its representation in binary (base 2) and in hexadecimal (base 16).
2. You must write the conversion methods - don't use library methods. You need to write two methods.

```
public static String intToBinary(int number)
public static String intToHexadecimal(int number)
```

Note: the basic idea is to start with an empty return String, take the number and find the value of the number modulo the base you are interested in (the remainder). Use a switch statement on the value of the remainder to pre-pend a digit to the return String. Divide the number by the base, and then repeat as long as the number is greater than zero - think "while loop".

3. Cut and paste your source code and screen shots of your running program into your lab document and hand it in. If you use electronic hand in, be sure to demo your running code to your TA so that the TA has a record of "checking you off" as having done this lab.

NOTE: Electronic hand in should be working at this point. Attempt to submit your lab work through the homework drop box in WebCT. However, we should view this as a test. If you encounter any problems, revert to paper based hand in.