Introduction to Systems Programming (Systems I)

Lab #0

Due: Tuesday June 2, 2020 by 11:59pm Midnight

Maximum Points: 50

Submission Instructions

This part of the Lab assignment must be turned-in electronically via Canvas. Ensure you name this document *MUid_lab0*.docx, where *MUid* is your Miami University unique ID. Complete the method shown for each problem. For each method, you can develop and test them in NetBeans and just copy-paste your solutions into this document.

Once you have completed answering the questions save this document as a PDF file (don't just rename the document; that is not the correct way to save as PDF) and upload it to Canvas

General Note: Upload each file associated with homework (or lab exercises) individually to Canvas. Do not upload archive file formats such as zip/tar/gz/7zip/rar etc.

Name: William Mechler

Part 1: Configure Remote C++ Project Development using NetBeans 8.2

Required reading:

- https://netbeans.org/kb/docs/cnd/remotedev-tutorial.html
- https://netbeans.org/kb/docs/cnd/remote-modes.html
    - Simple; Mixed; Full

Remote development toolbar

- View → Toolbars → Remote
- Connection status
    - (red, disconnected)
    - (green, connected)
- Create Remote Project
- Open Remote Project
- Open Remote File

Open the services window by choosing:

- Window → services

Right click the C++ Build Hosts node and select Add New Host

Manage Hosts

→ Properties

- File Transfer by SFTP

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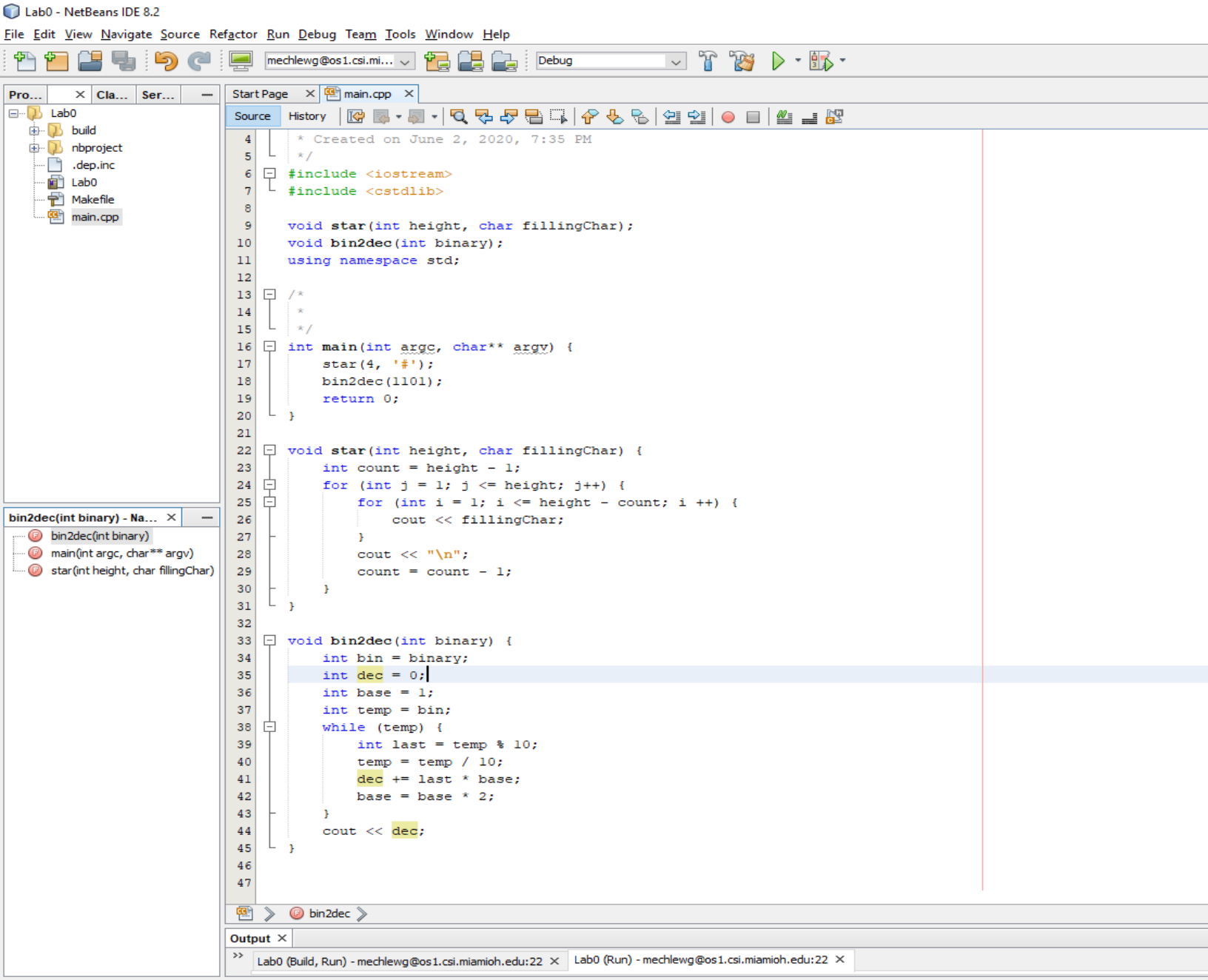
Once successfully setup the remote configuration, complete Part 2 and Part 3.



Part 2:

1. Write a function star that displays at the left margin of the screen a solid triangle of whatever character is contained in character parameter `fillingChar` and whose height is specified in integer parameter `height`.

Thus, if `height` is 4 and `fillingChar` is #, then this function should print the following:

```
#
##
###
####
```

```
// Prototype declaration
void star (int height, char fillingChar);

int main() {


}
void star(int height, char fillingChar)
   int count = height - 1;
   for (int j = 1; j <= height; j++) {
      for (int i = 1; i <= height - count; i ++) {
         cout << fillingChar;
      }
      cout << "\n";
      count = count - 1;
   }
}
```

Part 3:

2. (***Printing the Decimal Equivalent of a Binary Number***) Input an integer containing only 0s and 1s (i.e., a "binary" integer) and print its decimal equivalent. Use the remainder and division operators to pick off the "binary" number's digits one at a time from right to left. Much as in the decimal number system, where the rightmost digit has a positional value of 1, the next digit left has a positional value of 10, then 100, then 1000, and so on, in the binary number system the rightmost digit has a positional value of 1, the next digit left has a positional value of 2, then 4, then 8, and so on. Thus the decimal number 234 can be interpreted as 2 * 100 + 3 * 10 + 4* 1. The decimal equivalent of binary 1101 is 1* 1 + 0 * 2 + 1 * 4 + 1 * 8 or 1 + 0 + 4 + 8, or 13

```
// Prototype declaration
void bin2dec(int binary);

int main() {

}

Void bin2dec(int binary) {
   int bin = binary;
   int dec = 0;
   int base = 1;
   int temp = bin;
   while (temp) {
      int last = temp % 10;
      temp = temp / 10;
```

```
        dec += last * base;
        base = base * 2;
    }
    cout << dec;
}
```

Part 4: Submission

- No late assignments will be accepted!
- This work is to be done individually
- The submission file will be saved with the name ***Lab0_yourMUID.pdf***
- The source code will be saved with the name ***Lab0_yourMUID.cpp***
- Assignment is due Tuesday June 2, 2020 by 11:59pm Midnight
- On or before the due time, drop the *electronic copy* of your work in the *canvas*

Don't forget to Turn in the files! Lab0_yourMUID.pdf & Lab0_yourMUID.cpp