Basics7 – vTables

Due Date

- See Piazza for due date and time
  - Grading the next day
- Submit program to perforce in your student directory
  - Sub directory called:
    - /Basics7/...
  - Fill out your ***Basics7 Submission Report.pdf***
    - Place it in the same directory as your solution
    - Enter the final Changelist number of your submission
    - Enter the number of test passed
    - Write up a quick discussion in the report
      - What you learned from this basics

Goals

- vTables in C++
  - Understand vTables implementation
  - Understand vTable debugging
  - Researching vTables in multiple inheritance

Assignments

- General:
  - Add break points and debug code to understand the following classes:
    - A.h, C.H. E.H, and M.H
  - Answer the questions about vTable for each class:
    - Fill in the answers to:
      - vTableQuestions_A()
      - vTableQuestions_B()
      - ...
      - vTableQuestions_O()
  - For this assignment you will not be able to run the unit tests
    - Seeing the unit tests gives away the answers.
    - They are stubbed out.
    - Correct unit tests will be executed during grading
    - Reading article
  - Muy Importante!
    - Please read the multiple inheritance handout on vTables
      - *Memory Layout for Multiple and Virtual Inheritance.pdf*
    - It's clear and concise,
      - Who knows this might be on the final.
        - Besides its something all ninjas should know.

- Questions guidelines:
  - Enter
    - 1 - true
    - 0 - false
  - For the jump table
    - Extra slots were provided
    - Fill unused/unwanted slots with 0
- Please review and understand the multiple inheritance handout
  - Great coverage into the vTables of these tricky bastards
    - *Memory Layout for Multiple and Virtual Inheritance.pdf*

- Please review and predict the vTable on your own
  - You need to understand this material from just looking at the classes
  - Used the debugger to verify understanding
    - You will need (to get the full understanding):
      - Memory Window
      - Disassembly View
      - Local variable window
    - Break points in disassembly will be your best friend
  - Only run in Debug mode

- Make sure that your program compiles and runs
  - Warning level 4 sometimes that is not possible due to MS headers…
  - Your code should be squeaky clean.

- We are using Perforce
  - You should have received the document describing how to login.
    - Please look at the documentation and videos under the reference directory
  - Submit program to perforce in your student directory
    - Sub directory called: /Basics7/…
      - As described above
  - All your code must compile from perforce with no modifications.
    - Otherwise it's a 0, no exceptions

Validation

Simple check list to make sure that everything is checked in correctly

- Did you do answer all the questions (initial answers are incorrect)?
- Do they compile and run without any errors?
- Warning level 4 free?
- Submitted it into /Basics7 directory - without the extra files?
- Can you delete you local drive, regrab the Basics7 directory?
    - Is all the code there?

Hints

Most assignments will have hints in a section like this.

- This is pretty easy Basic assignment
    - It is mainly here to help you understand vTables mechanism
    - Single step through your code
        - Use the memory and disassemby window often
- I expect this assignment to be completed quickly for most of the students
    - Please make sure you fully understand this code without a debugger.
    - Many little lessons here for those who put in the effort.
- Enjoy