THIS IS A PROCTORED PRACTICAL

YOU MUST SHARE YOUR SCREEN SO YOUR PARTICIPATION IN THIS PRACTICAL CAN FULLY INVIGILATED

1. Create a Github repository "Assembly\_and\_C"
2. Create a sub directory PRACTICAL\_##
3. Add Github link to CA Spreadsheet   
   e.g <https://STUDENTID.github.com/Assembly_and_c/PRACTICAL_##>
4. Invite Lab Supervisors including **MuddyGames** as a collaborators
5. Go to designated group to complete practical
6. Upload completed Practical files to Github repository

Create a unique file ***e.g. practical\_##\_part#.c*** or ***practical\_##\_part#.asm*** for each practical section below.

Clone <https://bitbucket.org/MuddyGames/assembly-and-c-x86_64/src/master/>

Linux VM [https://comp-vcentre.itcarlow.ie](https://comp-vcentre.itcarlow.ie/)

**Objective** Understand and utilise x84 Assembly Instructions

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| **1** | Create a new directory and name ***practical\_09\_part1.***  This is a clone of **starterx32** directory  Program, edit compile and execute code to perform activities => |  |
|  |
| 1. Open terminal in Visual Studio Code 2. Perform a make 3. Run binary produced 4. Modify output string so that it outputs “Assembly and C” 5. Note registers used |
| **2** | Create a new directory and name ***practical\_09\_part2.***  This is a clone of **starterx64** directory  Program, edit compile and execute code to perform activities => | 1. Open terminal in Visual Studio Code 2. Perform a make 3. Run binary produced 4. Modify output string so that it outputs “Assembly and C” 5. Note registers used |
| **3** | Create a new directory and name ***practical\_09\_part3.***  This is a clone of **starterx32** directory  Debug binary produced in ***practical\_08\_part1***  Program, edit compile and execute code to perform activities => |  |
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| 1. Open terminal and issue following command  **gdb StarterKitx32** 2. Set a breakpoint  **break \_start** 3. Run binary  **run** 4. Step through using  **nexti**  AND  **next**   commands, observe difference 5. Rerun StarterKitx32 using  **run** command 6. Examine register values using   **layout reg** command 7. Examine register values using e.g.  **info registers eax** **i r eax** **info all-registers** commands 8. Take screenshots of each step and add to ***practical\_08\_part3*** directory |
| **4** | Create a new directory and name ***practical\_09\_part4.***  This is a clone of **integrationx32** directory  Program, edit compile and execute code to perform activities => |  |
|  |
| 1. Modify main.c and add.asm so that the method takes 3 arguments  **extern int add(int a,int b,int c);** 2. Compile run as check validity of code 3. Create and new assembly file which subtracts one number from another  **extern int sub(int a, int b);** 4. Modify make file to include the new assembly file sub.asm 5. Compile run as check validity of code |
| **5** | Complete Practical Quiz which will be provided by Lab Supervisor | |

**Demonstrate completed assembly files at the end of the LAB and ensure it has been checked**

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| **Student Name** |  | **Student Number** |  |
| **Date** |  | **Checked** |  |