1. Following are some of the tools/techniques used in the programming world. Categorize them based on which reasoning technique they relate to. Write three distinct points about the tool.

a. CUnit - testing

writing, administering, and running unit tests in C.

b. Opentracing - instrumentation

OpenTracing allows developers to add instrumentation to their application code using APIs that do not lock them into any one particular product or vendor.

c. Splint - security check

for statically checking C programs for security vulnerabilities and coding mistakes.

d. Z3 – logic

Z3 is a solver for symbolic logic

e. Selenium – Browser automation

It provides a playback tool for authoring functional tests across most modern web browsers, without the need to learn a test scripting language.

f. Valgrind

Valgrind is a programming tool for memory debugging, memory leak detection, and profiling.

g. Lint

a static code analysis tool used to flag programming errors, bugs, stylistic errors and suspicious constructs.

h. Alt-Ergo

Alt-Ergo is an automatic solver for mathematical formulas, specifically designed for program verification.

2. There is a requirement to install Linux/Ubuntu for this course. For Windows users, there are multiple options to install Linux within Windows itself.

a. By installing a virtual box on Windows and then Ubuntu.

b. Enabling WSL, Windows Subsystem for Linux, and install Ubuntu.

WSL Installed.

Watch a couple of videos of how to do this in YouTube and install it.