Remote Workshop

Exercise – Pressure measurement

Purpose: The purpose of this simulation is to gain an understanding of the basic principles of a pressure transmitter.

The pressure below the surface of a liquid increases the deeper you go. This happens because of the added weight of liquid pressing down on the lower surface.

In a manometer or U tube, the pressure difference between the sides causes a change in liquid surface levels.

The pressure difference P is given by the equation

$P = \rho gh$

Where

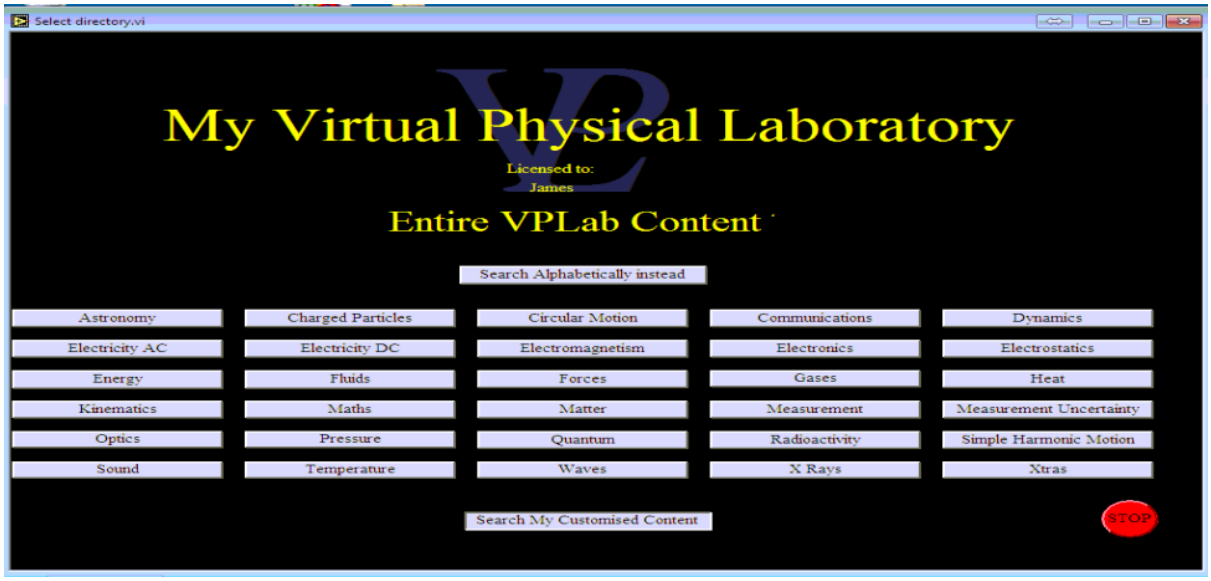
ρ is the density

g is the acceleration due to gravity

h is the difference in liquid levels.

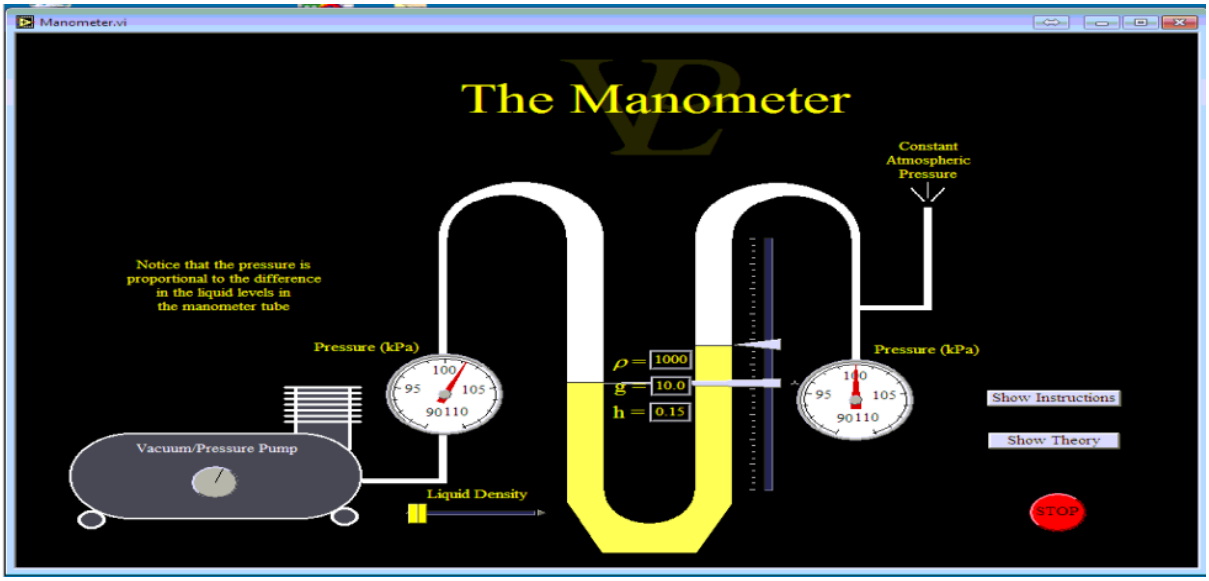
Experimental Procedure:

- Follow the **VPLabs Access Instructions.pdf** for instructions, but select Pressure instead of Electricity AC, however, the procedure for using the software remains the same.



10. Click on the icon titled ‘Pressure”

11. Now click on the icon titled ‘Manometer’. This will commence the simulation for the exercises.



12. Once the simulation is running,

13. Vary the pressure by adjusting the knob on the pump and see what happens to the levels.

14. Vary the density of the liquid using the red horizontal slider and see what happens to the levels. Notice that there are three different densities.

NOTE: Take a screen shot of your window and submit it as evidence of the exercise. Also submit your answer to - Why does the density of the liquid have this effect?