INSTRUCTIONS FOR THE OSCILLOSCOPE SIMULATOR PROJECT

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*Channel mode:

1. <u>Ch_1(Red Button):</u> If the box with a red filled circle is left clicked, only the red signal wave can be seen on the screen. After the left click, user will be asked to input the value of amplitude, time period and shape of the wave and corresponding value will be plotted depending on the pixel. At the top of the box, amplitude can be inputted; middle and bottom are for time period and shape respectively. Only one of the three components can be inputted at a time.

    Shape is Sinusoidal by default. User can input SINE for shape, it's not mandatory.

    For example, if amplitude is inputted, time period cannot be inputted at that turn. For that, user has to click on T.PERIOD (time period) option and then put the value.

    User can shift from this mode to any mode without clicking the right button of mouse or he can also choose none option by simply clicking the right button.

2. <u>Ch_2 (Blue Button):</u> Same as Ch_1.

Note: 'Enter' from the keyboard has to be pressed after inputting the values. While giving input, keys like 'Backspace', 'Space', 'Shift' etc cannot be pressed.

*ARISE AMPLITUDE_1:

Left click on this box will result in increase in the amplitude of the red wave by Ch_1 and the wave of Ch_2 will disappear. Amplitude will increase as far as the simulator screen. While increasing, if right button is clicked, increment will stop immediately and both the waves will appear on the screen.

*LOWER AMPLITUDE_1:

Left click on this box will result in decrease in the amplitude of the red wave by Ch_1 and the wave of Ch_2 will disappear. Amplitude will keep decreasing until amplitude becomes 0. While decreasing, if right button is clicked, decrement will stop immediately and both the waves will appear on the screen.

*ARISE AMPLITUDE_2 and LOWER AMPLITUDE_2:

Functions of these 2 boxes are same as the previous two. Only difference is, these 2 boxes are applicable for Ch_2.

*INCREASE FREQUENCY_1:

Left click on this box will result in increase in the frequency of the red wave by Ch_1 and the wave of Ch_2 will disappear. While increasing, if right button is clicked, increment will stop immediately and both the waves will appear on the screen. Thus, many cycles can be seen on the screen.

*DECREASE FREQUENCY_1:

Left click on this box will result in decrease in the frequency of the red wave by Ch_1 and the blue wave of Ch_2 will disappear. While decreasing, if right button is clicked, decrement will stop immediately and both the waves will appear on the screen. Decrement will continue until only a half cycle can be seen on the screen.

*INCREASE FREQUENCY_2 and DECREASE FREQUENCY_2:

Left click on these boxes will act exactly as the 2 previous ones. Only difference is, these 2 boxes are for the blue wave by Ch_2 and left click on these boxes will disappear the red wave.

* DYNAMIC:

Left click on this box will prompt input from keyboard.

1. If 1 is inputted, the red wave will move from right to left on the screen.
2. If 2 is inputted, the blue wave will move from right to left.
3. If b is inputted, both the waves will move from right to left at the same time.

Note: After inputting, 'Enter' must be pressed. If right button is clicked, static mode will return.

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