A very quick guide to ordering PCBs online on JLCPCB

(https://jlcpcb.com/)

Regular order

For quotes and order simulation (in order to test options & cost), no account is required.

Just upload the supplied Gerber ZIP file on the order page.

Leave all parameters default, except possibly:

- quantity (5 or 10 are the most cost-effective options)
- color (no surcharge for different colors, only green is slightly faster to manufacture)

It is good practice to check the files with the integrated Gerber viewer; however, be aware that it is not bulletproof, sometimes it shows issues that just aren't there. However, what is most important , it does not show bad files as being OK.

Proceed with the choice of shipping, payments etc.

Panelized order (single design)

Often, with small boards, ordering a large number of them makes the price rise unnecessarily.

One solution could be to draw a single, larger board in the PCB design application, with the PCB trace repeated several times; a new Gerber file will then be generated.

This is sometimes done; from the manufacturer's point of view, the resulting board is simply a single, larger board as any other, and the cost is only very marginally higher (at least if it remains within the "discount" size of 10x10mm). The main drawback is that the customer then has to carefully saw off the individual, smaller boards.

The site however also offers the "panelizing" option.

Panelizing takes different forms, however, the simplest one (which we're most interested in) is as following: the manufacturer is supplied with the individual small board design, as for a regular order, and automatically repeats it on a larger board (panel) as many times as specified by the customer according to the board and desired panel sizes.

For instance, a 24mm x 48mm "base" board can be repeated 2 times in width and 4 times in height to fit a 100x100mm panel (incuding a very little spacing margin).

The finished panel is then pre-cut with scoring lines (V-cuts); the customer will then break the individual boards.

Panelizing in this form usually costs a small additional fee, but alows to produce a larger number of small boards at a much more favorable price.

Notes:

- The cuts separating the boards can only run straight from side to side of the panel. (There are other types of cut with more flexible options, but they are outside the scope of this simple guide).
- Panelizing can be done by the customer (in the design file) or by the manufacturer; this option is usually much simpler, because the customer just has to supply the base design and specify the number of repetitions. The rest is taken care of by the manufacturer.

- The number of "boards" in the order form, in this case, is actually the number of panels! In the example above (where a panel contains 8 "base" boards), ordering the minimum of 5 boards yields a total of 5x8 = 40 base boards.

Panelized order (Multiple design)

Often, a few types - i.e. designs - of smaller boards are needed (say designs "A", "B" and "C"), but making a panel for each one of them (times the minimum 5-board quantity) could be excessive.

In this case, panels can be specified to contain more that one design. For instance, let's say we can arrange 2x "A", 2x "B" and 4x "C" designs on a 100x100mm panel; ordering just 5 boards will get us 10x "A", 10x "B" and 20x "C" boards, which might already satisfy our requirements.

In the order form, the number of different designs per panel can be specified; the additional fee is obviously a little higher.

However, for multi-design panels, keep in mind the following:

- the board arrangement must be specified by the customer in the design file;
- it might not be easy to conveniently fit the particular designs in a given panel size (although sizes larger than the basic ones are possible, and often not much more expensive);
- it might not be easy, or at all possible, to arrange the position of V-cuts as technically required (although, as mentioned, other cutting options exist).

A few informative links:

https://support.jlcpcb.com/article/68-instructions-for-ordering

https://support.jlcpcb.com/article/49-pcb-panelization

https://support.jlcpcb.com/article/24-how-do-i-order-a-panel

https://jlcpcb.com/capabilities/Capabilities