High-harmonic radiation emitted from molecules in a strong laser field contains the information on molecular structure and dynamics. When multiple molecular orbitals are exposed to a strong laser field, the highest-occupied molecular orbital (HOMO) is mostly ionized and thus emits strong high-harmonic radiation containing the characteristics of HOMO. The radiation from the energetically lower-lying molecular orbital (HOMO-1) is often too weak in investigating the characteristics of the HOMO-1, necessitating special techniques to observe the radiation from the HOMO-1. We present that two-dimensional high-harmonic spectroscopy could resolve high-harmonic radiation emitted from the two highest-occupied molecular orbitals, HOMO and HOMO-1, of aligned molecules. By applying an orthogonally polarized two-color laser field consisting of the fundamental and its second harmonic fields, the characteristics attributed to the two orbitals of CO2 molecules were found to be separately imprinted in odd and even harmonics [1]. Two-dimensional high-harmonic spectroscopy could thus reveal the multi-orbital characteristics of molecules, opening a new route to investigate ultrafast molecular dynamics.