Digitalization throughout the industry leads to rapidly increasing amounts of data captured and stored which brings forth challenges for indexing and accessing large digital repositories. Very often, the data takes form of complex multi-part entities, such as images with relational attributes, photos with geographical coordinates or textual posts with multimedia content and implicit social relationships. The complexity of such entities and lack of fixed structure makes it impossible to use classical information retrieval methods based on attribute filtering, ranking or grouping, as it is not easy or sometimes even possible to define an exact query. In this thesis, we target data exploration as an act of exploring an unfamiliar area via a series of intuitive, effective and efficient system-supported steps. We present methodologies, demo applications and evaluation results targeting different data sources of multimedia data. Furthermore, we focus on the ability to utilize multiple modalities within a single session and on integrating the results into widely used software solutions.