Uracil-Specific Exision Reagent (USER) fusion is a recently developed technique that allows for assembly of multiple DNA fragments in a few simple steps. However, designing primers for USER fusion is both tedious and time consuming. Here, we present the Primer Help for USER (PHUSER) software, a novel tool for designing primers specifically for USER fusion and USER cloning applications. We also present proof-of-concept experimental validation of its functionality. PHUSER offers quick and easy design of PCR optimized primers ensuring directionally correct fusion of fragments into a plasmid containing a customizable USER cassette. Designing primers using PHUSER ensures that the primers have similar annealing temperature (Tm), which is essential for efficient PCR. PHUSER also avoids identical overhangs, thereby ensuring correct order of assembly of DNA fragments. All possible primers are individually analysed in terms of GC content, presence of GC clamp at 3’-end, the risk of primer dimer formation, the risk of intra-primer complementarity (secondary structures) and the presence of polyN stretches. Furthermore, PHUSER offers the option to insert linkers between DNA fragments, as well as highly flexible cassette options. PHUSER is publicly available at http://www.cbs.dtu.dk/services/phuser/.