This part introduces important concepts in hardware–software codesign. We compare and contrast the two classic ‘mindsets of design’: the hardware mindset and the software mindset, and we point out that hardware/software codesign is more than just glueing hardware and software components together; instead, it’s about finding the correct balance between flexibility and performance in a design. The trade-off between parallel and sequential implementations is another fundamental idea for a codesigner; we will discuss a concurrent system model (data-flow) that can be converted into hardware (parallel) as well as into software (sequential). We will also discuss the analysis of C programs in terms of control-flow and data-flow.