Terms

- **Sicky bit** A bit that is set when an overflow occurs in an arithmetic operation.
- **Structural hazard** means that the hardware cannot support the combination of instructions that we want to execute in the same clock cycle. (e.g. two instructions want to read from the same register file at the same time)
- **Round** is the first of two extra bits kept on the right during intermediate calculations of floating-point numbers; used to imrove rounding accuracy.
- **Data hazard** is a condition in which either the source or destination operands of an instruction are not available at the time expected. (e.g. a value is not yet written to a register when it is needed by another instruction)
- **Pipeline data hazard** A pipeline data hazard occurs when an instruction depends on the result of a previous instruction in a way that is exposed by the pipeline. (e.g. a value is not yet written to a register when it is needed by another instruction)
- **Pipelining** is an implementation technique in which multiple instructions are overlapped in execution.
- **Guard** A guard is a boolean expression that must be true for the instruction to execute.
- **Control signal** is a signal used for multiplexer selection or for directing the operation of a functional unit. (e.g. a signal that tells the ALU to add or subtract)
- **Data signal** A control signal is a signal that is asserted by a control unit to cause a particular action in the execution of an instruction.
- **Scientific notation** A method of writing numbers as the product of a mantissa and a power of two.
- **Normalized number** A normalized number is a number in which the mantissa is between 1 and 2.
- **Floating points** A floating point is a number that can be represented in scientific notation.
- **Double precision** Double precision is a floating point format that uses 64 bits.
- **Single precision** Single precision is a floating point format that uses 32 bits.
- **Half precision** Half precision is a floating point format that uses 16 bits.