

**Table 1.1 Classes of Interrupts**

<b>Program</b>	Generated by some condition that occurs as a result of an instruction execution, such as arithmetic overflow, division by zero, attempt to execute an illegal machine instruction, and reference outside a user's allowed memory space.
<b>Timer</b>	Generated by a timer within the processor. This allows the operating system to perform certain functions on a regular basis.
<b>I/O</b>	Generated by an I/O controller, to signal normal completion of an operation or to signal a variety of error conditions.
<b>Hardware failure</b>	Generated by a failure, such as power failure or memory parity error.

**Table 1.2 Characteristics of Two-Level Memories**

	<b>Main Memory Cache</b>	<b>Virtual Memory (Paging)</b>	<b>Disk Cache</b>
<b>Typical access time ratios</b>	5 : 1	$10^6$ : 1	$10^6$ : 1
<b>Memory management system</b>	Implemented by special hardware	Combination of hardware and system software	System software
<b>Typical block size</b>	4 to 128 bytes	64 to 4096 bytes	64 to 4096 bytes
<b>Access of processor to second level</b>	Direct access	Indirect access	Indirect access

**Table 1.3 Relative Dynamic Frequency of High-Level Language Operations**

<b>Study</b>	[HUCK83]	[KNUT71]	[PATT82]		[TANE78]
<b>Language</b>	Pascal	FORTRAN	Pascal	C	SAL
<b>Workload</b>	Scientific	Student	System	System	System
Assign	74	67	45	38	42
Loop	4	3	5	3	4
Call	1	3	15	12	12
IF	20	11	29	43	36
GOTO	2	9	—	3	—
Other	—	7	6	1	6