

Microprocessor	Year	Clock Rate	Pipeline Stages	Issue Width	Out-of-Order/ Speculation	Cores/ Chip	Power
Intel 486	1989	25 MHz	5	1	No	1	5W
Intel Pentium	1993	66 MHz	5	2	No	1	10W
Intel Pentium Pro	1997	200 MHz	10	3	Yes	1	29W
Intel Pentium 4 Willamette	2001	2000 MHz	22	3	Yes	1	75W
Intel Pentium 4 Prescott	2004	3600 MHz	31	3	Yes	1	103W
Intel Core	2006	3000 MHz	14	4	Yes	2	75W
Intel Core i7 Nehalem	2008	3600 MHz	14	4	Yes	2-4	87W
Intel Core Westmere	2010	3730 MHz	14	4	Yes	6	130W
Intel Core i7 Ivy Bridge	2012	3400 MHz	14	4	Yes	6	130W
Intel Core Broadwell	2014	3700 MHz	14	4	Yes	10	140W
Intel Core i9 Skylake	2016	3100 MHz	14	4	Yes	14	165W
Intel Ice Lake	2018	4200 MHz	14	4	Yes	16	185W

FIGURE 4.73 Record of Intel Microprocessors in terms of pipeline complexity, number of cores, and power. The Pentium 4 pipeline stages do not include the commit stages. If we included them, the Pentium 4 pipelines would be even deeper.