**فهرست مطالب**

فصل اول: مقدمه ایی بر ریزپردازنده ها

[1-1:تعریف ریزپردازنده 8](file:///K%3A%5CUni%5C%D9%83%D8%A7%D8%B1%D8%A2%D9%85%D9%88%D8%B2%D9%8A%5C%DA%A9%D8%A7%D9%85%D9%BE%DB%8C%D9%88%D8%AA%D8%B1%5C%D9%BE%D8%B1%D9%88%DA%98%D9%87%5CMicroProcessor.docx#a1)

[1-2:تاريخچه مختصري از ريزپردازنده ها 8](file:///K%3A%5CUni%5C%D9%83%D8%A7%D8%B1%D8%A2%D9%85%D9%88%D8%B2%D9%8A%5C%DA%A9%D8%A7%D9%85%D9%BE%DB%8C%D9%88%D8%AA%D8%B1%5C%D9%BE%D8%B1%D9%88%DA%98%D9%87%5CMicroProcessor.docx#a2)

[1-3:ساختمان داخلی يک پردازنده 11](file:///K%3A%5CUni%5C%D9%83%D8%A7%D8%B1%D8%A2%D9%85%D9%88%D8%B2%D9%8A%5C%DA%A9%D8%A7%D9%85%D9%BE%DB%8C%D9%88%D8%AA%D8%B1%5C%D9%BE%D8%B1%D9%88%DA%98%D9%87%5CMicroProcessor.docx#a3)

[4-1:کمک پردازنده یا پردازنده کمکی چیست ؟ 15](file:///K%3A%5CUni%5C%D9%83%D8%A7%D8%B1%D8%A2%D9%85%D9%88%D8%B2%D9%8A%5C%DA%A9%D8%A7%D9%85%D9%BE%DB%8C%D9%88%D8%AA%D8%B1%5C%D9%BE%D8%B1%D9%88%DA%98%D9%87%5CMicroProcessor.docx#a4)

[1-5:تراشه های واسط یا اینترفیس 18](file:///K%3A%5CUni%5C%D9%83%D8%A7%D8%B1%D8%A2%D9%85%D9%88%D8%B2%D9%8A%5C%DA%A9%D8%A7%D9%85%D9%BE%DB%8C%D9%88%D8%AA%D8%B1%5C%D9%BE%D8%B1%D9%88%DA%98%D9%87%5CMicroProcessor.docx#a5)

[1-6:گذرگاه های سیستم (BUS) 19](file:///K%3A%5CUni%5C%D9%83%D8%A7%D8%B1%D8%A2%D9%85%D9%88%D8%B2%D9%8A%5C%DA%A9%D8%A7%D9%85%D9%BE%DB%8C%D9%88%D8%AA%D8%B1%5C%D9%BE%D8%B1%D9%88%DA%98%D9%87%5CMicroProcessor.docx#a6)

[1-6-1:گذرگاه داده (Data Bus) 20](file:///K%3A%5CUni%5C%D9%83%D8%A7%D8%B1%D8%A2%D9%85%D9%88%D8%B2%D9%8A%5C%DA%A9%D8%A7%D9%85%D9%BE%DB%8C%D9%88%D8%AA%D8%B1%5C%D9%BE%D8%B1%D9%88%DA%98%D9%87%5CMicroProcessor.docx#a7)

[1-6-2:گذرگاه آدرس (Address Bus) 22](file:///K%3A%5CUni%5C%D9%83%D8%A7%D8%B1%D8%A2%D9%85%D9%88%D8%B2%D9%8A%5C%DA%A9%D8%A7%D9%85%D9%BE%DB%8C%D9%88%D8%AA%D8%B1%5C%D9%BE%D8%B1%D9%88%DA%98%D9%87%5CMicroProcessor.docx#a8)

[1-6-3:گذرگاه كنترل (Control Bus) 23](file:///K%3A%5CUni%5C%D9%83%D8%A7%D8%B1%D8%A2%D9%85%D9%88%D8%B2%D9%8A%5C%DA%A9%D8%A7%D9%85%D9%BE%DB%8C%D9%88%D8%AA%D8%B1%5C%D9%BE%D8%B1%D9%88%DA%98%D9%87%5CMicroProcessor.docx#a9)

[**فصل دوم : انواع ريزپردازنده ها و تكنولوژي ساخت آن ها**](file:///K%3A%5CUni%5C%D9%83%D8%A7%D8%B1%D8%A2%D9%85%D9%88%D8%B2%D9%8A%5C%DA%A9%D8%A7%D9%85%D9%BE%DB%8C%D9%88%D8%AA%D8%B1%5C%D9%BE%D8%B1%D9%88%DA%98%D9%87%5CMicroProcessor.docx#b0)

[2-1:خانواده ریزپردازنده های 80x86 26](file:///K%3A%5CUni%5C%D9%83%D8%A7%D8%B1%D8%A2%D9%85%D9%88%D8%B2%D9%8A%5C%DA%A9%D8%A7%D9%85%D9%BE%DB%8C%D9%88%D8%AA%D8%B1%5C%D9%BE%D8%B1%D9%88%DA%98%D9%87%5CMicroProcessor.docx#b1)

[2-2:ریزپردازنده 8086 27](file:///K%3A%5CUni%5C%D9%83%D8%A7%D8%B1%D8%A2%D9%85%D9%88%D8%B2%D9%8A%5C%DA%A9%D8%A7%D9%85%D9%BE%DB%8C%D9%88%D8%AA%D8%B1%5C%D9%BE%D8%B1%D9%88%DA%98%D9%87%5CMicroProcessor.docx#b2)

[2-3:ریزپردازنده 8088 30](file:///K%3A%5CUni%5C%D9%83%D8%A7%D8%B1%D8%A2%D9%85%D9%88%D8%B2%D9%8A%5C%DA%A9%D8%A7%D9%85%D9%BE%DB%8C%D9%88%D8%AA%D8%B1%5C%D9%BE%D8%B1%D9%88%DA%98%D9%87%5CMicroProcessor.docx#b3)

[2-4:ریزپردازنده 80286 32](file:///K%3A%5CUni%5C%D9%83%D8%A7%D8%B1%D8%A2%D9%85%D9%88%D8%B2%D9%8A%5C%DA%A9%D8%A7%D9%85%D9%BE%DB%8C%D9%88%D8%AA%D8%B1%5C%D9%BE%D8%B1%D9%88%DA%98%D9%87%5CMicroProcessor.docx#b4)

[2-5:ریزپردازنده 80386 33](file:///K%3A%5CUni%5C%D9%83%D8%A7%D8%B1%D8%A2%D9%85%D9%88%D8%B2%D9%8A%5C%DA%A9%D8%A7%D9%85%D9%BE%DB%8C%D9%88%D8%AA%D8%B1%5C%D9%BE%D8%B1%D9%88%DA%98%D9%87%5CMicroProcessor.docx#b5)

[2-6:ریزپردازنده 80486 35](file:///K%3A%5CUni%5C%D9%83%D8%A7%D8%B1%D8%A2%D9%85%D9%88%D8%B2%D9%8A%5C%DA%A9%D8%A7%D9%85%D9%BE%DB%8C%D9%88%D8%AA%D8%B1%5C%D9%BE%D8%B1%D9%88%DA%98%D9%87%5CMicroProcessor.docx#b6)

[2-7:پنتيوم 37](file:///K%3A%5CUni%5C%D9%83%D8%A7%D8%B1%D8%A2%D9%85%D9%88%D8%B2%D9%8A%5C%DA%A9%D8%A7%D9%85%D9%BE%DB%8C%D9%88%D8%AA%D8%B1%5C%D9%BE%D8%B1%D9%88%DA%98%D9%87%5CMicroProcessor.docx#b7)

[2-8:پنتیوم پرو اینتل Pentium Pro 43](file:///K%3A%5CUni%5C%D9%83%D8%A7%D8%B1%D8%A2%D9%85%D9%88%D8%B2%D9%8A%5C%DA%A9%D8%A7%D9%85%D9%BE%DB%8C%D9%88%D8%AA%D8%B1%5C%D9%BE%D8%B1%D9%88%DA%98%D9%87%5CMicroProcessor.docx#b8)

[2-9:پنتیوم II 46](file:///K%3A%5CUni%5C%D9%83%D8%A7%D8%B1%D8%A2%D9%85%D9%88%D8%B2%D9%8A%5C%DA%A9%D8%A7%D9%85%D9%BE%DB%8C%D9%88%D8%AA%D8%B1%5C%D9%BE%D8%B1%D9%88%DA%98%D9%87%5CMicroProcessor.docx#b9)

 [2-10:پردازنده سلرن Celeron 48](file:///K%3A%5CUni%5C%D9%83%D8%A7%D8%B1%D8%A2%D9%85%D9%88%D8%B2%D9%8A%5C%DA%A9%D8%A7%D9%85%D9%BE%DB%8C%D9%88%D8%AA%D8%B1%5C%D9%BE%D8%B1%D9%88%DA%98%D9%87%5CMicroProcessor.docx#b10)

[2-11:پنتيوم III 49](file:///K%3A%5CUni%5C%D9%83%D8%A7%D8%B1%D8%A2%D9%85%D9%88%D8%B2%D9%8A%5C%DA%A9%D8%A7%D9%85%D9%BE%DB%8C%D9%88%D8%AA%D8%B1%5C%D9%BE%D8%B1%D9%88%DA%98%D9%87%5CMicroProcessor.docx#b11)

[2-12:پنتیوم 4 (pentium IV) 50](file:///K%3A%5CUni%5C%D9%83%D8%A7%D8%B1%D8%A2%D9%85%D9%88%D8%B2%D9%8A%5C%DA%A9%D8%A7%D9%85%D9%BE%DB%8C%D9%88%D8%AA%D8%B1%5C%D9%BE%D8%B1%D9%88%DA%98%D9%87%5CMicroProcessor.docx#b12)

[2-13:پنتیوم M 54](file:///K%3A%5CUni%5C%D9%83%D8%A7%D8%B1%D8%A2%D9%85%D9%88%D8%B2%D9%8A%5C%DA%A9%D8%A7%D9%85%D9%BE%DB%8C%D9%88%D8%AA%D8%B1%5C%D9%BE%D8%B1%D9%88%DA%98%D9%87%5CMicroProcessor.docx#b13)

[2-14:پردازنده سنترینو centrino 55](file:///K%3A%5CUni%5C%D9%83%D8%A7%D8%B1%D8%A2%D9%85%D9%88%D8%B2%D9%8A%5C%DA%A9%D8%A7%D9%85%D9%BE%DB%8C%D9%88%D8%AA%D8%B1%5C%D9%BE%D8%B1%D9%88%DA%98%D9%87%5CMicroProcessor.docx#b14)

[2-15:پنتیوم ( (Pentium D 56](file:///K%3A%5CUni%5C%D9%83%D8%A7%D8%B1%D8%A2%D9%85%D9%88%D8%B2%D9%8A%5C%DA%A9%D8%A7%D9%85%D9%BE%DB%8C%D9%88%D8%AA%D8%B1%5C%D9%BE%D8%B1%D9%88%DA%98%D9%87%5CMicroProcessor.docx#b15)

[2-16:پردازنده P7 یا Itanium 57](file:///K%3A%5CUni%5C%D9%83%D8%A7%D8%B1%D8%A2%D9%85%D9%88%D8%B2%D9%8A%5C%DA%A9%D8%A7%D9%85%D9%BE%DB%8C%D9%88%D8%AA%D8%B1%5C%D9%BE%D8%B1%D9%88%DA%98%D9%87%5CMicroProcessor.docx#b16)

[**فصل سوم : انواع معماری ریزپردازنده ها**](file:///K%3A%5CUni%5C%D9%83%D8%A7%D8%B1%D8%A2%D9%85%D9%88%D8%B2%D9%8A%5C%DA%A9%D8%A7%D9%85%D9%BE%DB%8C%D9%88%D8%AA%D8%B1%5C%D9%BE%D8%B1%D9%88%DA%98%D9%87%5CMicroProcessor.docx#c0)

[3-1:معماری Superscalar و ویژگی MMX 60](file:///K%3A%5CUni%5C%D9%83%D8%A7%D8%B1%D8%A2%D9%85%D9%88%D8%B2%D9%8A%5C%DA%A9%D8%A7%D9%85%D9%BE%DB%8C%D9%88%D8%AA%D8%B1%5C%D9%BE%D8%B1%D9%88%DA%98%D9%87%5CMicroProcessor.docx#c1)

[3-2:مودهای عملکرد در ریزپردازنده های اینتل 63](file:///K%3A%5CUni%5C%D9%83%D8%A7%D8%B1%D8%A2%D9%85%D9%88%D8%B2%D9%8A%5C%DA%A9%D8%A7%D9%85%D9%BE%DB%8C%D9%88%D8%AA%D8%B1%5C%D9%BE%D8%B1%D9%88%DA%98%D9%87%5CMicroProcessor.docx#c2)

[3-3 Real Mode: 64](file:///K%3A%5CUni%5C%D9%83%D8%A7%D8%B1%D8%A2%D9%85%D9%88%D8%B2%D9%8A%5C%DA%A9%D8%A7%D9%85%D9%BE%DB%8C%D9%88%D8%AA%D8%B1%5C%D9%BE%D8%B1%D9%88%DA%98%D9%87%5CMicroProcessor.docx#c3)

[3-4: Protected Mode 64](file:///K%3A%5CUni%5C%D9%83%D8%A7%D8%B1%D8%A2%D9%85%D9%88%D8%B2%D9%8A%5C%DA%A9%D8%A7%D9%85%D9%BE%DB%8C%D9%88%D8%AA%D8%B1%5C%D9%BE%D8%B1%D9%88%DA%98%D9%87%5CMicroProcessor.docx#c4)

[3-5: Privileged Mode 65](file:///K%3A%5CUni%5C%D9%83%D8%A7%D8%B1%D8%A2%D9%85%D9%88%D8%B2%D9%8A%5C%DA%A9%D8%A7%D9%85%D9%BE%DB%8C%D9%88%D8%AA%D8%B1%5C%D9%BE%D8%B1%D9%88%DA%98%D9%87%5CMicroProcessor.docx#c5)

[3-6: Virtual Real Mode 65](file:///K%3A%5CUni%5C%D9%83%D8%A7%D8%B1%D8%A2%D9%85%D9%88%D8%B2%D9%8A%5C%DA%A9%D8%A7%D9%85%D9%BE%DB%8C%D9%88%D8%AA%D8%B1%5C%D9%BE%D8%B1%D9%88%DA%98%D9%87%5CMicroProcessor.docx#c6)

[3-7:ولتاژ ریزپردازنده 65](file:///K%3A%5CUni%5C%D9%83%D8%A7%D8%B1%D8%A2%D9%85%D9%88%D8%B2%D9%8A%5C%DA%A9%D8%A7%D9%85%D9%BE%DB%8C%D9%88%D8%AA%D8%B1%5C%D9%BE%D8%B1%D9%88%DA%98%D9%87%5CMicroProcessor.docx#c7)

[3-8:مديريت انرژي در ریزپردازنده هاي جديد 66](file:///K%3A%5CUni%5C%D9%83%D8%A7%D8%B1%D8%A2%D9%85%D9%88%D8%B2%D9%8A%5C%DA%A9%D8%A7%D9%85%D9%BE%DB%8C%D9%88%D8%AA%D8%B1%5C%D9%BE%D8%B1%D9%88%DA%98%D9%87%5CMicroProcessor.docx#c8)

[3-9:سرعت پالس های ساعت سیستم 69](file:///K%3A%5CUni%5C%D9%83%D8%A7%D8%B1%D8%A2%D9%85%D9%88%D8%B2%D9%8A%5C%DA%A9%D8%A7%D9%85%D9%BE%DB%8C%D9%88%D8%AA%D8%B1%5C%D9%BE%D8%B1%D9%88%DA%98%D9%87%5CMicroProcessor.docx#c9)

[3-10:طراحی CISC و RISC 72](file:///K%3A%5CUni%5C%D9%83%D8%A7%D8%B1%D8%A2%D9%85%D9%88%D8%B2%D9%8A%5C%DA%A9%D8%A7%D9%85%D9%BE%DB%8C%D9%88%D8%AA%D8%B1%5C%D9%BE%D8%B1%D9%88%DA%98%D9%87%5CMicroProcessor.docx#c10)

[**فصل چهارم : معماری های امروزی**](file:///K%3A%5CUni%5C%D9%83%D8%A7%D8%B1%D8%A2%D9%85%D9%88%D8%B2%D9%8A%5C%DA%A9%D8%A7%D9%85%D9%BE%DB%8C%D9%88%D8%AA%D8%B1%5C%D9%BE%D8%B1%D9%88%DA%98%D9%87%5CMicroProcessor.docx#d0)

[4-1:مروري بر معماري CISC 75](file:///K%3A%5CUni%5C%D9%83%D8%A7%D8%B1%D8%A2%D9%85%D9%88%D8%B2%D9%8A%5C%DA%A9%D8%A7%D9%85%D9%BE%DB%8C%D9%88%D8%AA%D8%B1%5C%D9%BE%D8%B1%D9%88%DA%98%D9%87%5CMicroProcessor.docx#d1)

[4-2:معماري RISC 77](file:///K%3A%5CUni%5C%D9%83%D8%A7%D8%B1%D8%A2%D9%85%D9%88%D8%B2%D9%8A%5C%DA%A9%D8%A7%D9%85%D9%BE%DB%8C%D9%88%D8%AA%D8%B1%5C%D9%BE%D8%B1%D9%88%DA%98%D9%87%5CMicroProcessor.docx#d2)

[4-3:معماري سوپر اسکالر 78](file:///K%3A%5CUni%5C%D9%83%D8%A7%D8%B1%D8%A2%D9%85%D9%88%D8%B2%D9%8A%5C%DA%A9%D8%A7%D9%85%D9%BE%DB%8C%D9%88%D8%AA%D8%B1%5C%D9%BE%D8%B1%D9%88%DA%98%D9%87%5CMicroProcessor.docx#d3)

[4-4توصيف معماري سوپر اسکالر 79](file:///K%3A%5CUni%5C%D9%83%D8%A7%D8%B1%D8%A2%D9%85%D9%88%D8%B2%D9%8A%5C%DA%A9%D8%A7%D9%85%D9%BE%DB%8C%D9%88%D8%AA%D8%B1%5C%D9%BE%D8%B1%D9%88%DA%98%D9%87%5CMicroProcessor.docx#d4)

[4-5:فرمان و رمزگشايي اوليه 82](file:///K%3A%5CUni%5C%D9%83%D8%A7%D8%B1%D8%A2%D9%85%D9%88%D8%B2%D9%8A%5C%DA%A9%D8%A7%D9%85%D9%BE%DB%8C%D9%88%D8%AA%D8%B1%5C%D9%BE%D8%B1%D9%88%DA%98%D9%87%5CMicroProcessor.docx#d5)

[4-6:معماري پنتيوم 86](file:///K%3A%5CUni%5C%D9%83%D8%A7%D8%B1%D8%A2%D9%85%D9%88%D8%B2%D9%8A%5C%DA%A9%D8%A7%D9%85%D9%BE%DB%8C%D9%88%D8%AA%D8%B1%5C%D9%BE%D8%B1%D9%88%DA%98%D9%87%5CMicroProcessor.docx#d6)

[4-7:معماري8086 87](file:///K%3A%5CUni%5C%D9%83%D8%A7%D8%B1%D8%A2%D9%85%D9%88%D8%B2%D9%8A%5C%DA%A9%D8%A7%D9%85%D9%BE%DB%8C%D9%88%D8%AA%D8%B1%5C%D9%BE%D8%B1%D9%88%DA%98%D9%87%5CMicroProcessor.docx#d7)

[4-8:معماري NetBurst 90](file:///K%3A%5CUni%5C%D9%83%D8%A7%D8%B1%D8%A2%D9%85%D9%88%D8%B2%D9%8A%5C%DA%A9%D8%A7%D9%85%D9%BE%DB%8C%D9%88%D8%AA%D8%B1%5C%D9%BE%D8%B1%D9%88%DA%98%D9%87%5CMicroProcessor.docx#d8)

[فهرست منابع 94](file:///K%3A%5CUni%5C%D9%83%D8%A7%D8%B1%D8%A2%D9%85%D9%88%D8%B2%D9%8A%5C%DA%A9%D8%A7%D9%85%D9%BE%DB%8C%D9%88%D8%AA%D8%B1%5C%D9%BE%D8%B1%D9%88%DA%98%D9%87%5CMicroProcessor.docx#End)