1019-11-6 **Hyeok-Je Jeong*** (hyeokje.jeong@hynix.com), Daedong Firenze 303dong 103ho 61-1 Sammun-ri, Jangyu-myun Gimhae-si Kyungnam, 621-832 Gimhae, Kyungnam, South Korea. *The Distribution of Prime Numbers and Its Application to a Proof.* Preliminary report.

The distribution of prime numbers was investigated in advance to prove a well-known conjecture. The distribution pattern of prime numbers may be described from a relation rule among prime numbers. Every natural number, n, belongs to some pattern, and this pattern is characterized by prime numbers under $\sqrt[2]{n}$. The density of prime number in the pattern is the multiple of $(Pi-1)/Pi$ (Pi: ith prime number under $\sqrt[2]{n}$). The relation principle among prime numbers was applied to a famous conjecture. It is Goldbach conjecture. The conjecture is that all even numbers larger than 2 are the sum of two prime numbers. The approach chosen here was indirect way. There's a prime number beneath an even number E, and if there's no prime number pair below $\sqrt[2]{E}$, there's another new prime number between $E - \sqrt[2]{E}$ and E due to the relation rule between prime numbers. And if theres's no prime number which could constitute a prime number pair again, there's another prime number between $E - \sqrt[2]{E}$ and E. This procedure should be repeated until finding the prime number pair. For the longest procedure, the prime number pair may be composed of 3 and $\sqrt[2]{E} - 3$. (Received March 31, 2006)