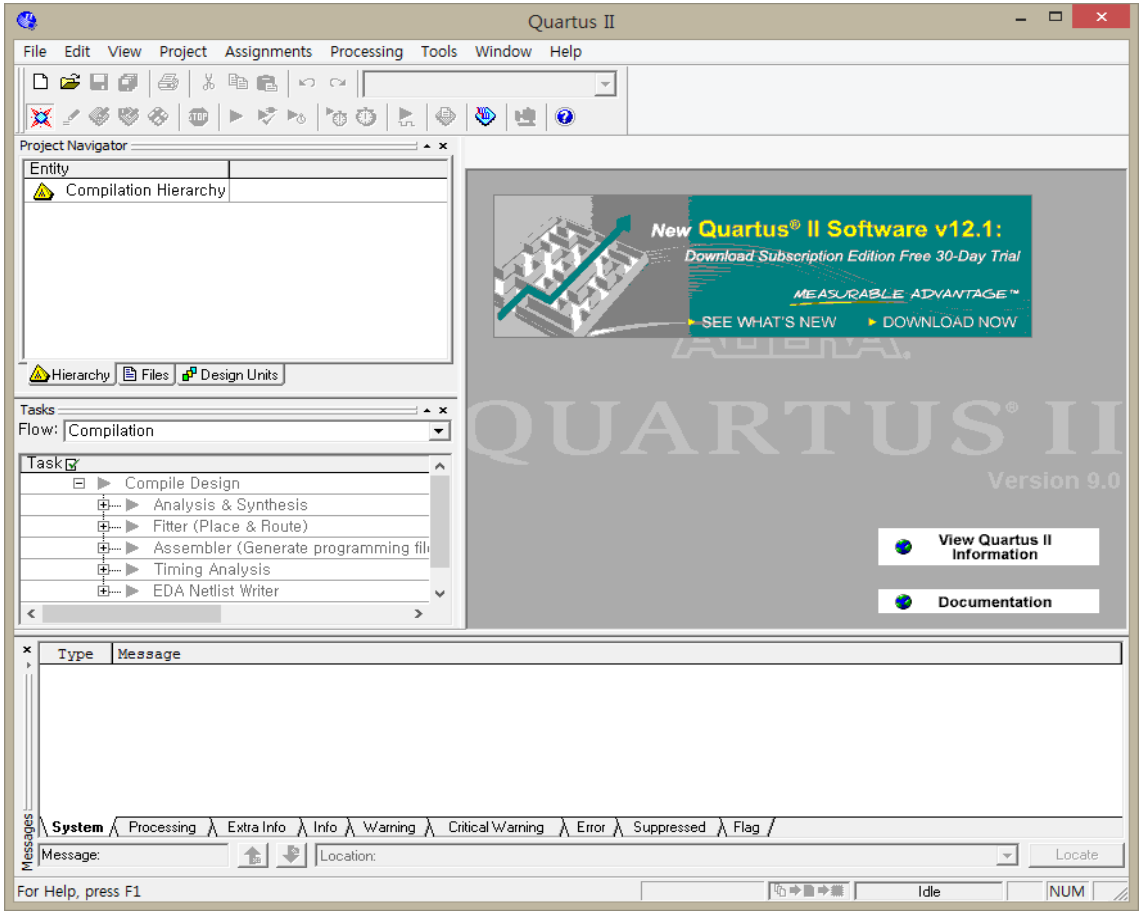
논리 설계 및 실험

Date : 2016 . 04 . 1

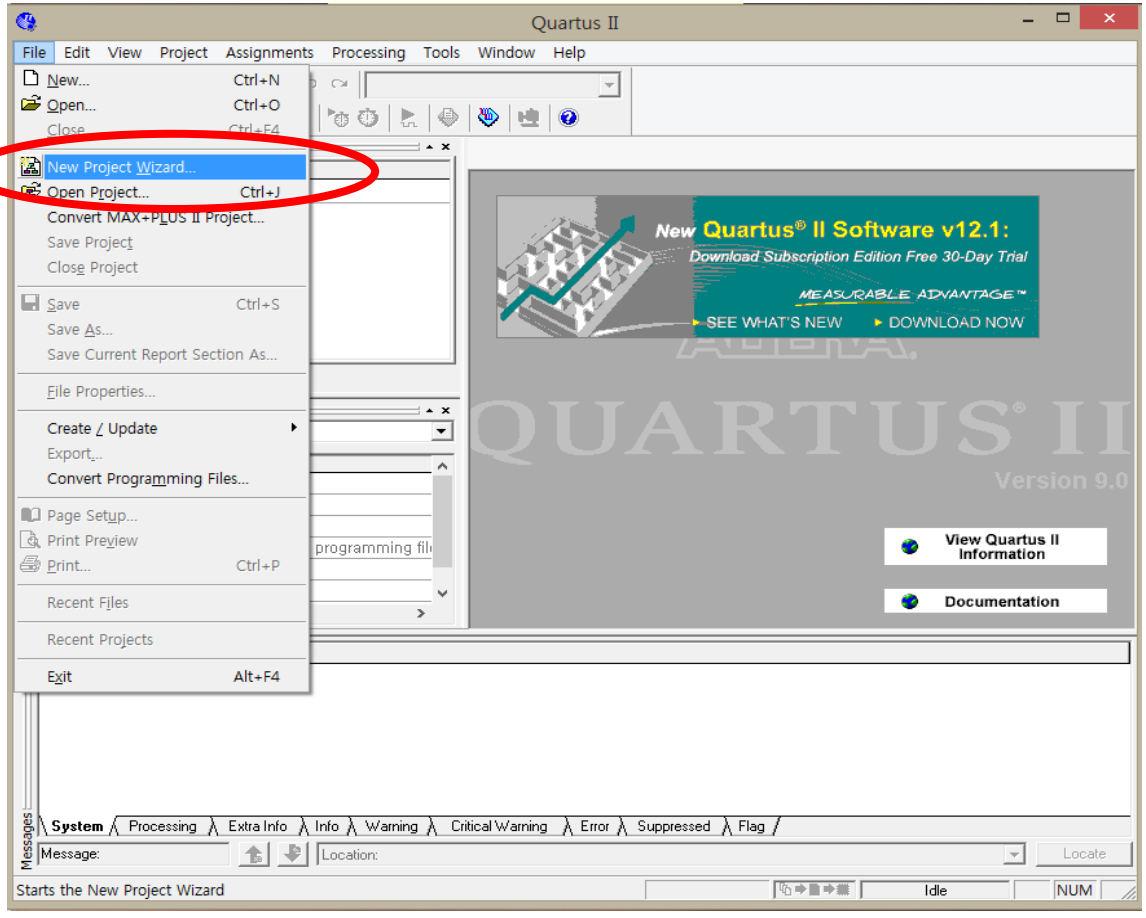
김 영 대

Quartus II 사용법



Quartus II 9.0 초기화면

Quartus II 사용법

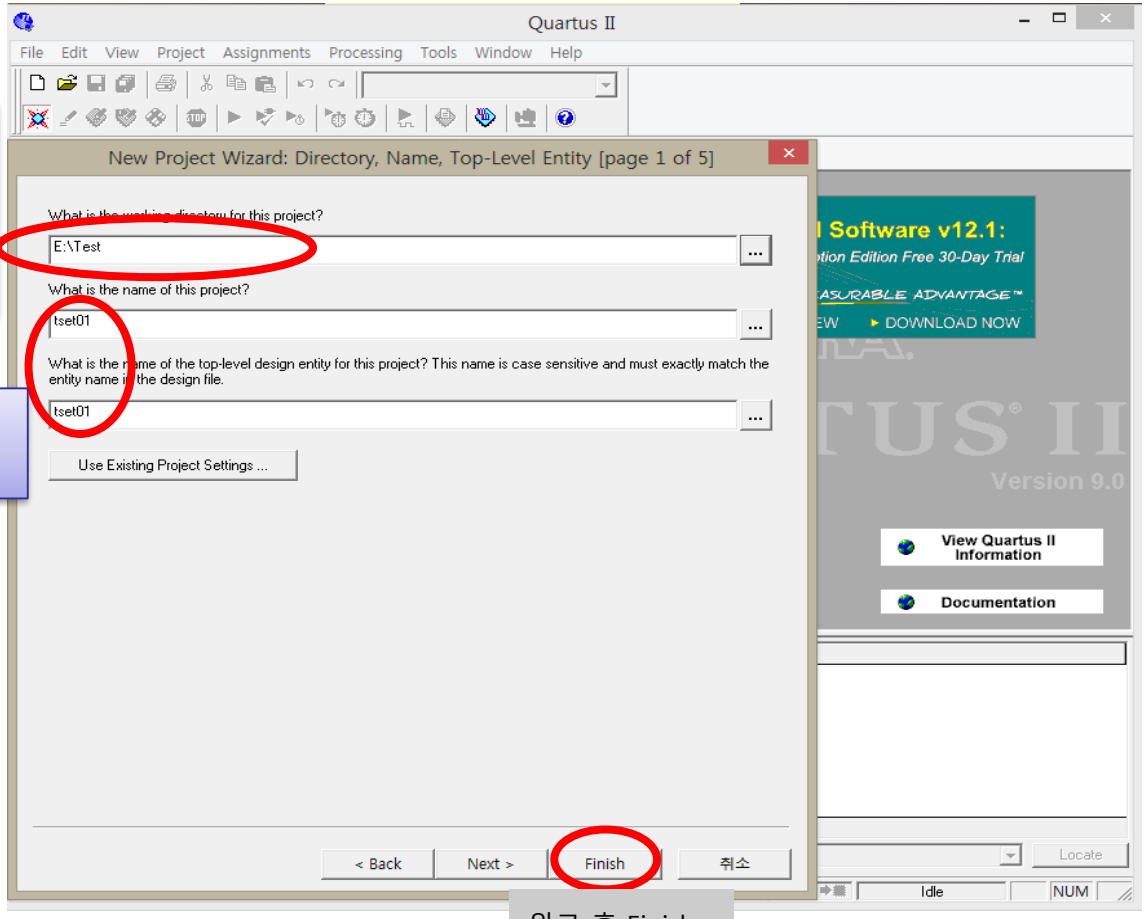


File 메뉴 → New Project Wizard 실행

Quartus II 사용법

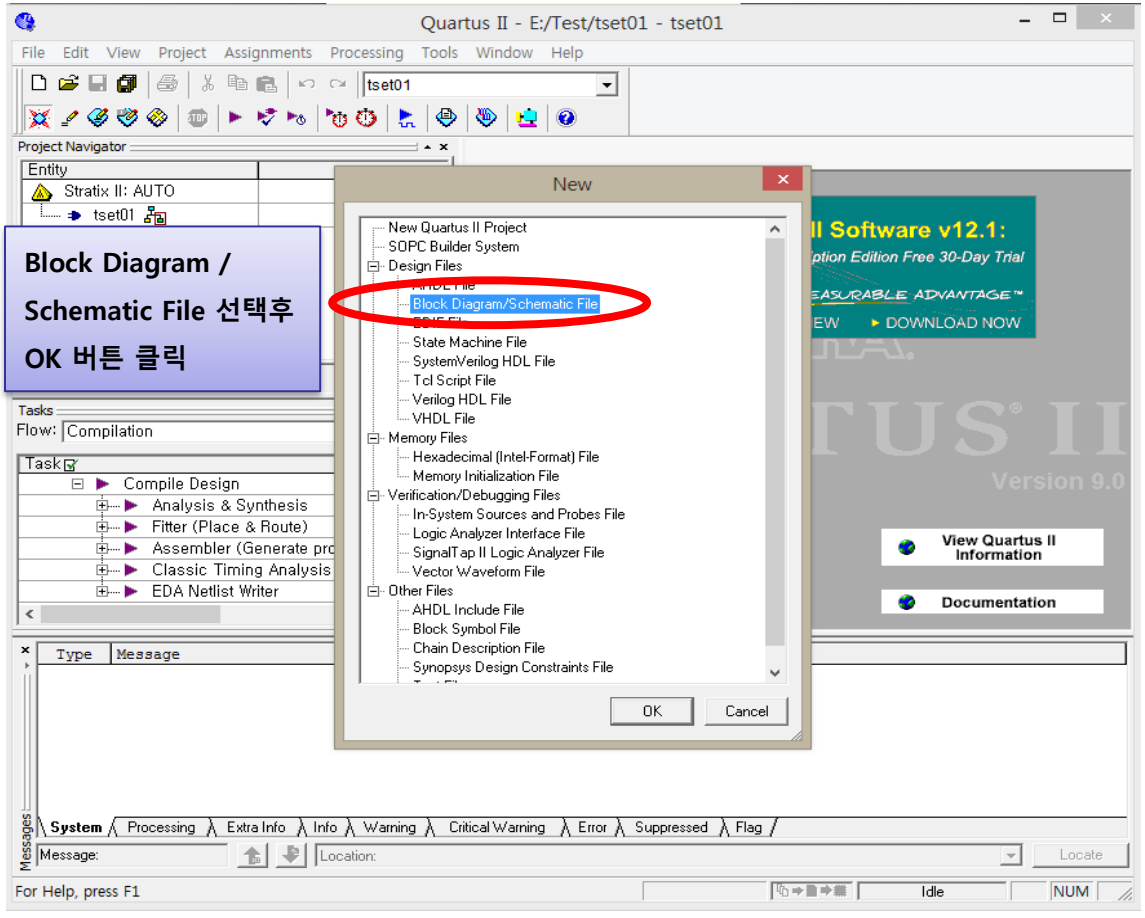
프로젝트 폴더 지정 (C드라이브 외의 다른 임의의 드라이브에 저장)

프로젝트 이름은 각자 임의 지정



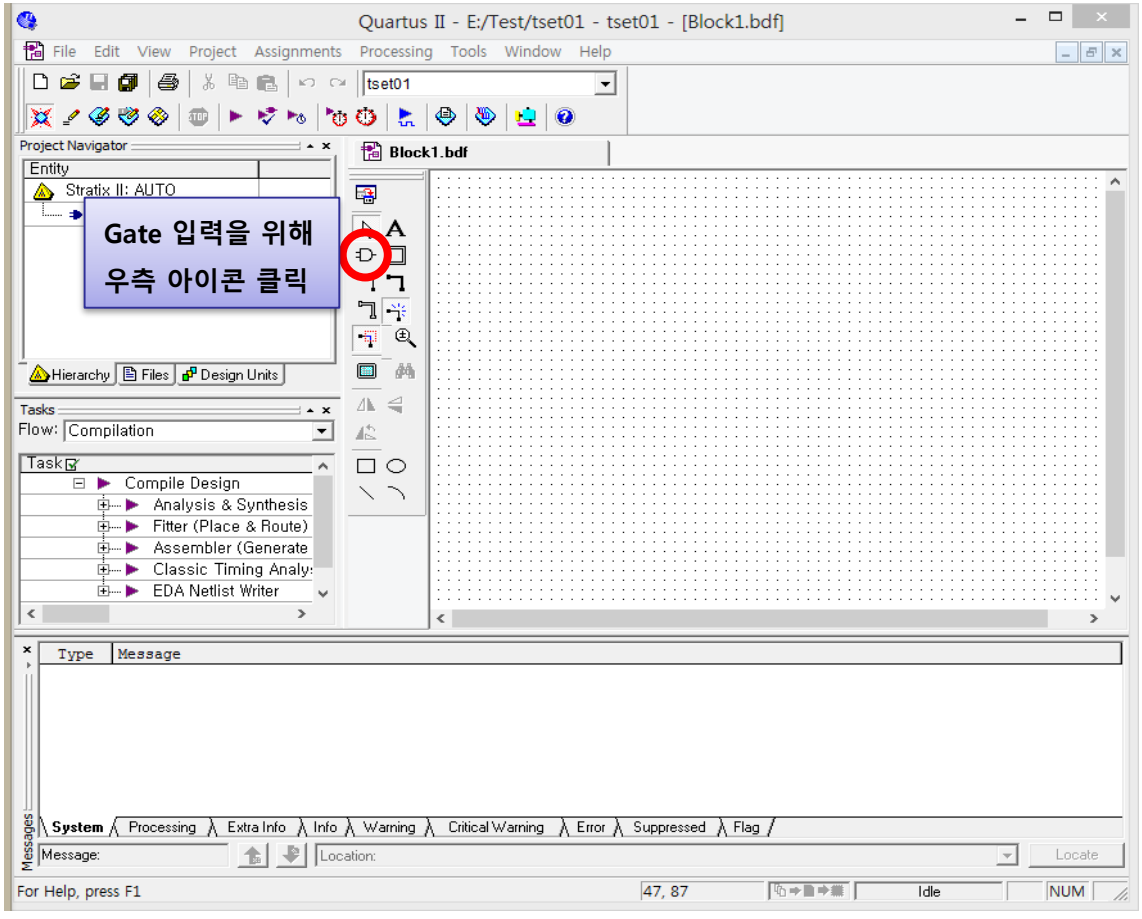
완료 후 Finish

Quartus II 사용법

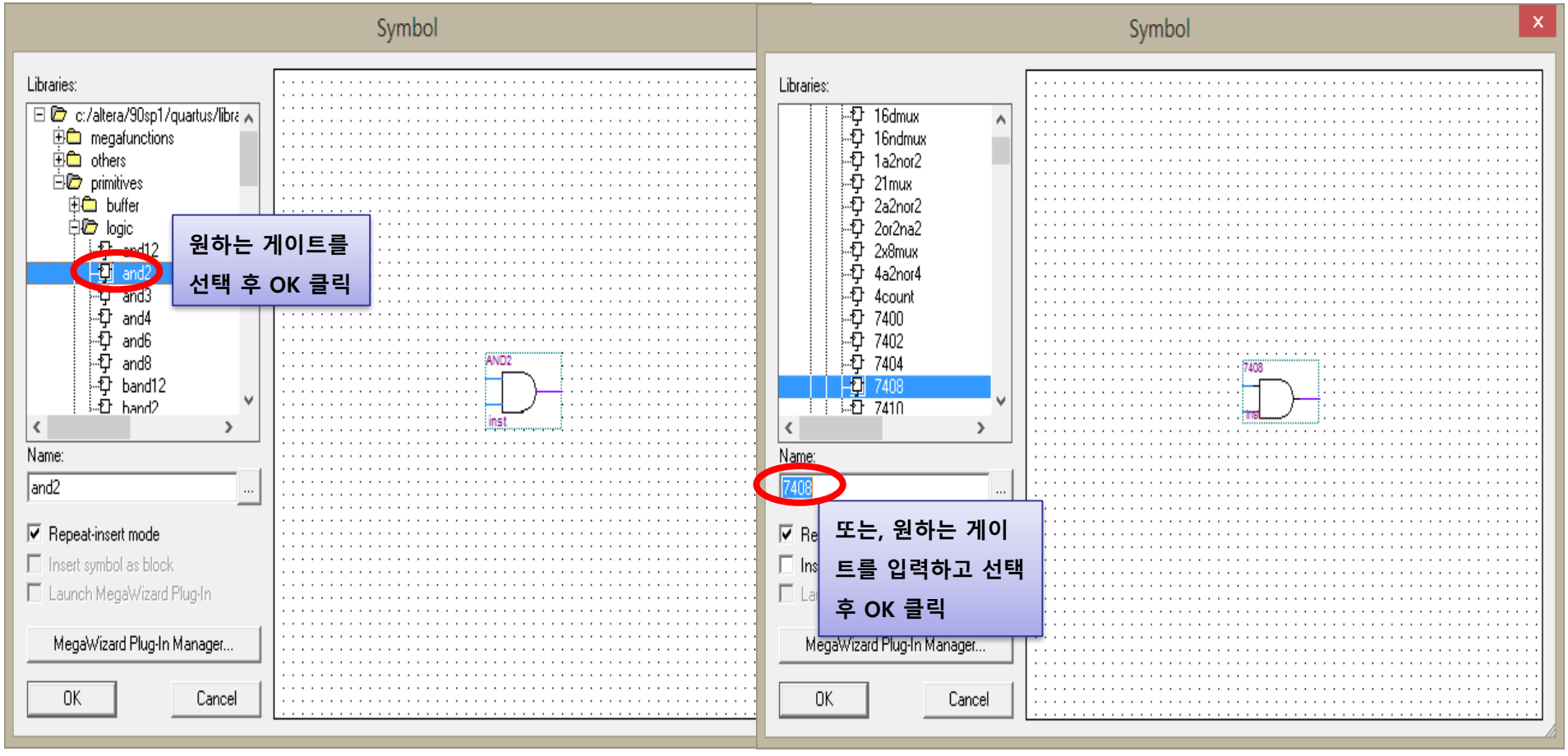


File 메뉴 → New 실행

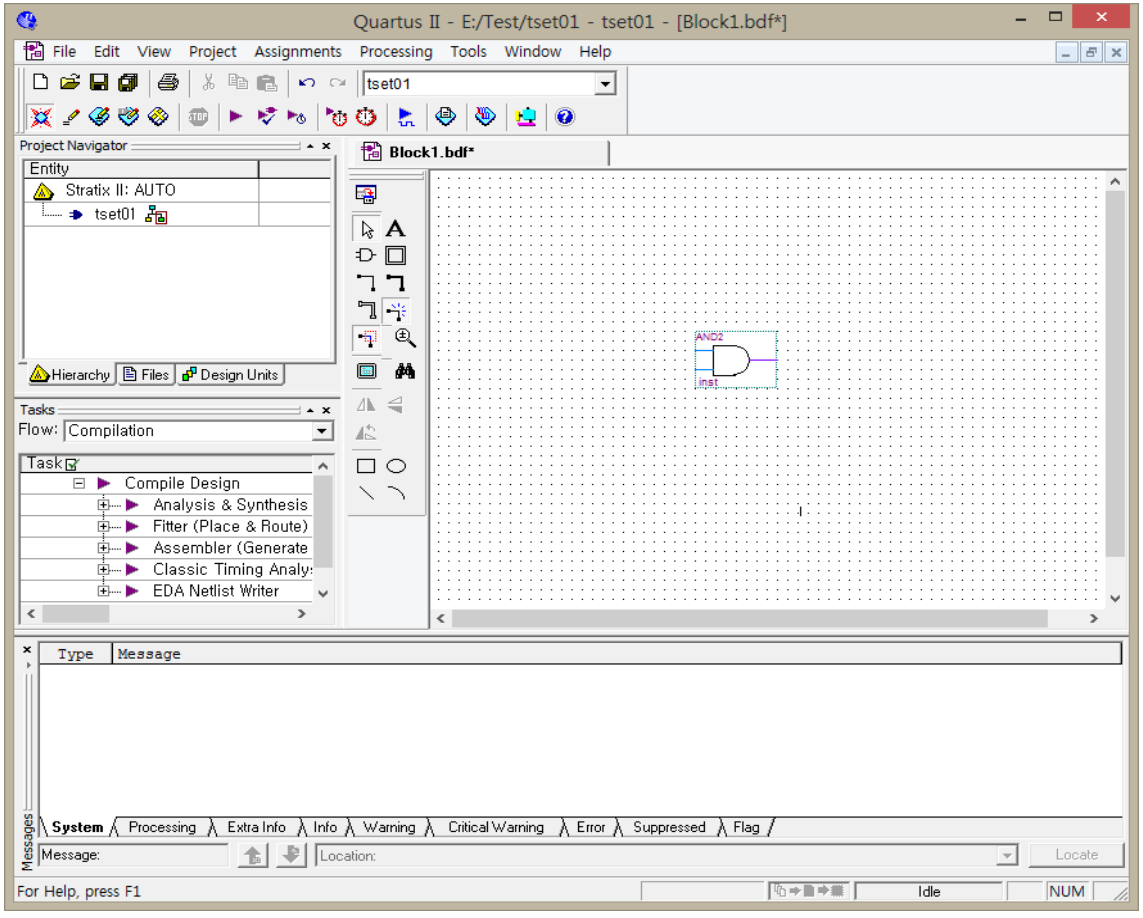
Quartus II 사용법



Quartus II 사용법

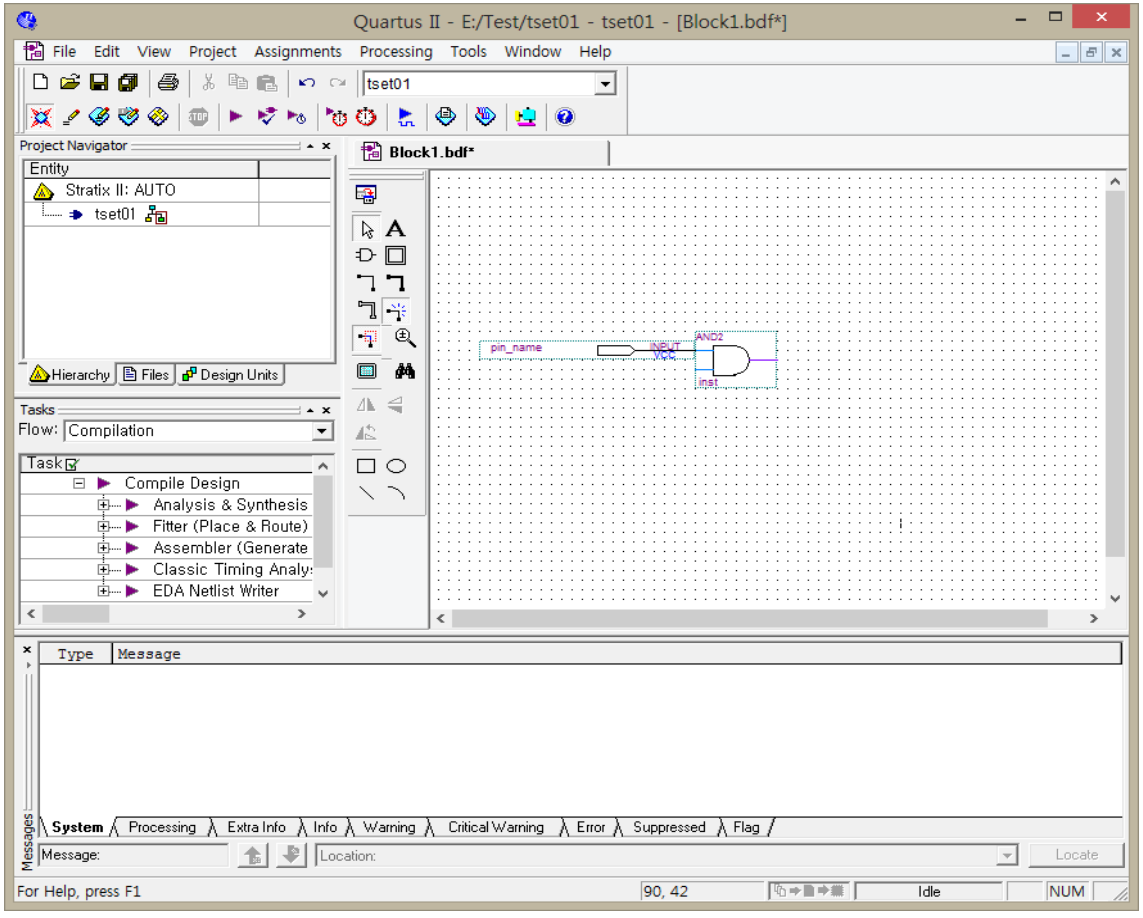


Quartus II 사용법



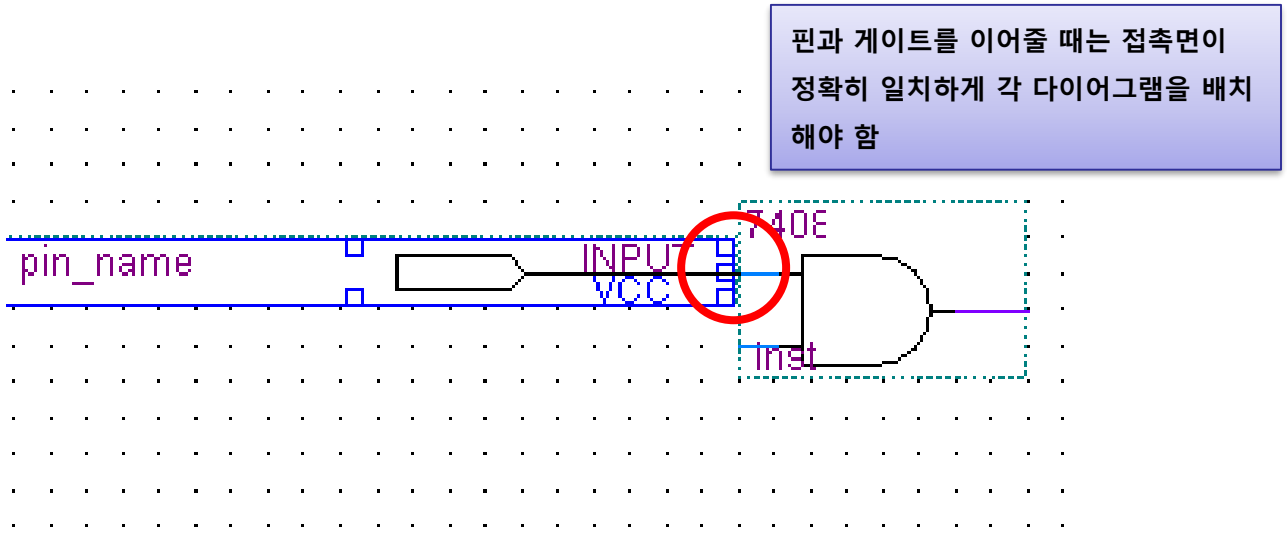
AND Gate 입력 완료

Quartus II 사용법

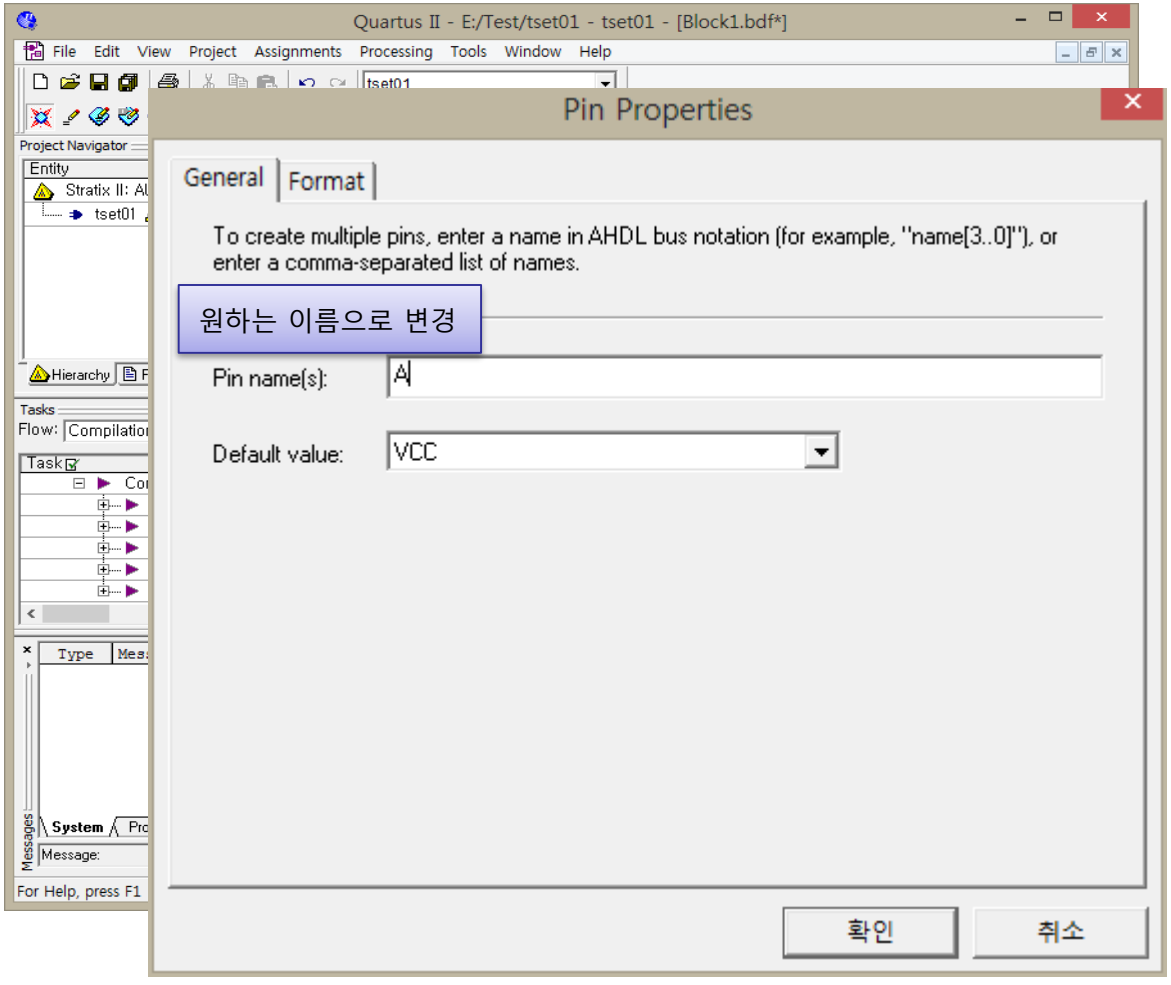


input Pin을 추가 (AND 게이트를 입력하는 방법과 동일, input 으로 검색)

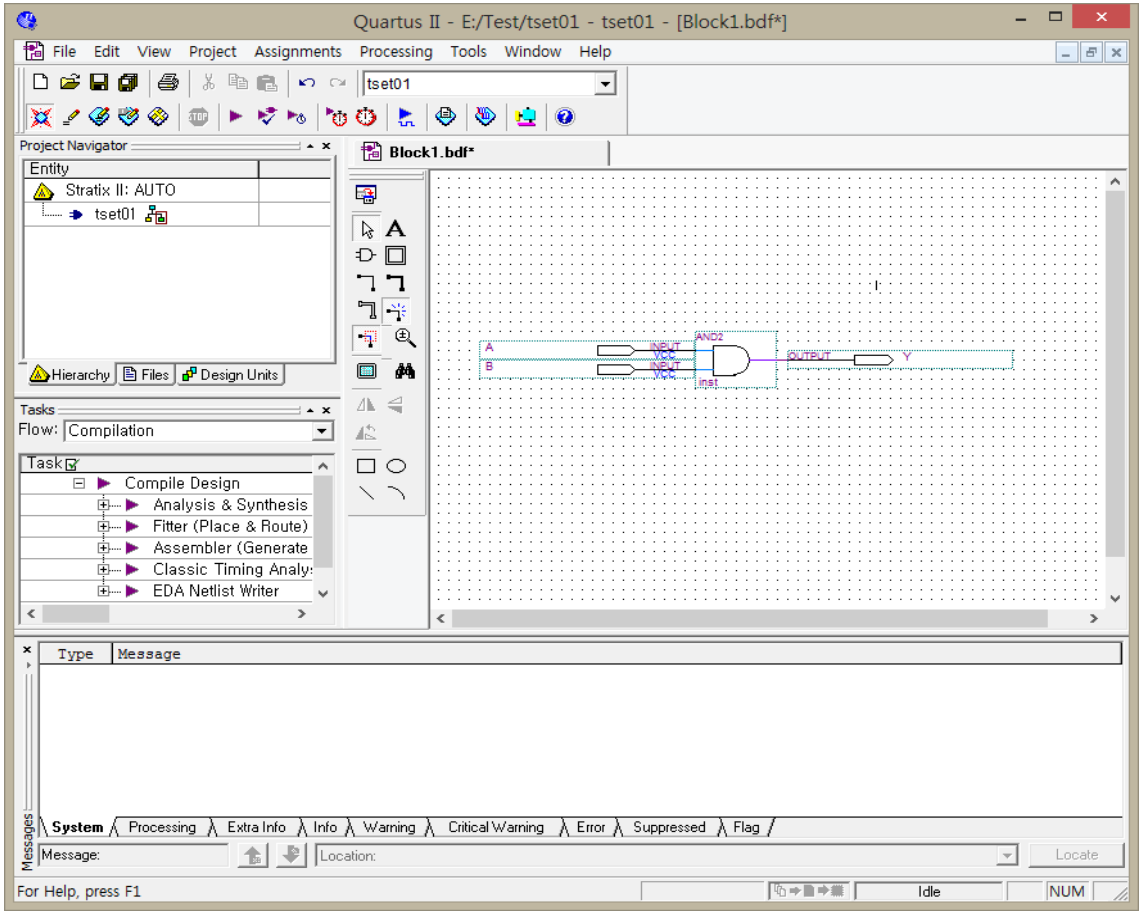
Quartus II 사용법



Quartus II 사용법

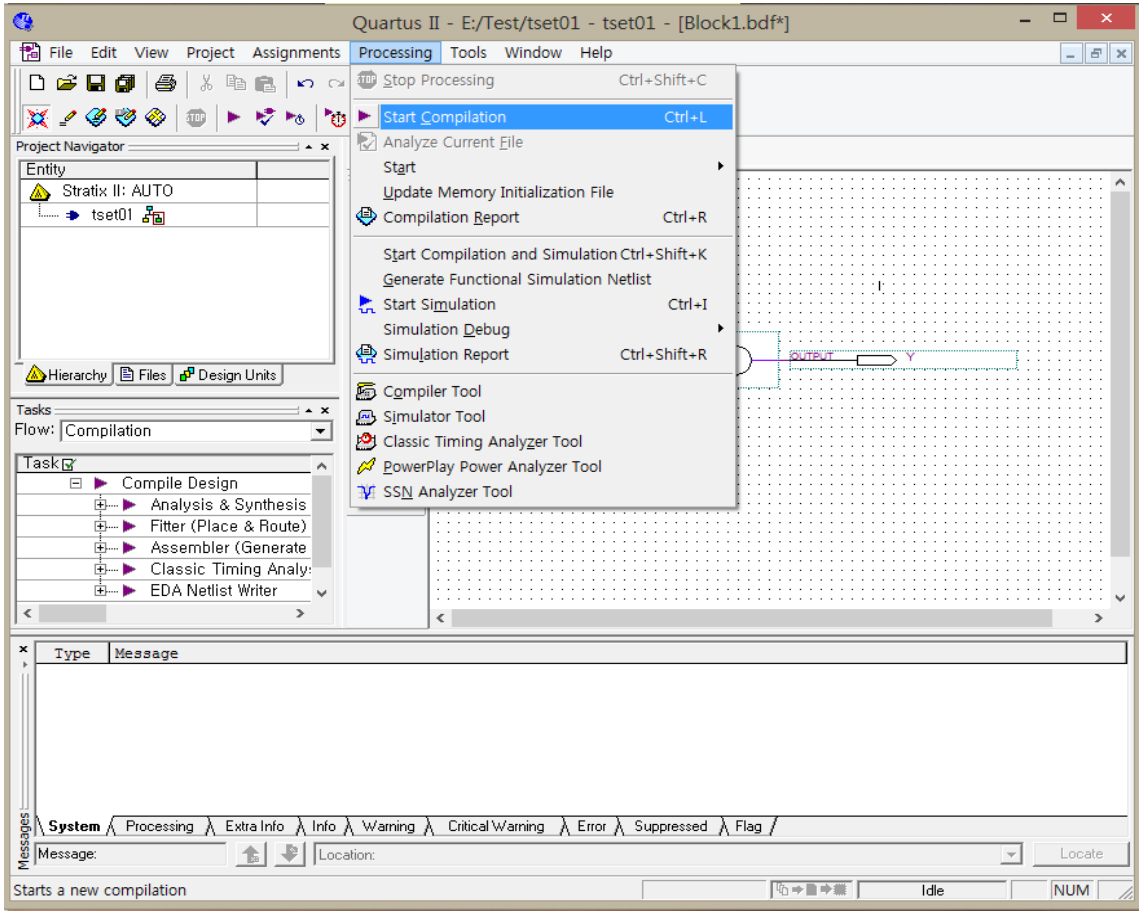


Quartus II 사용법

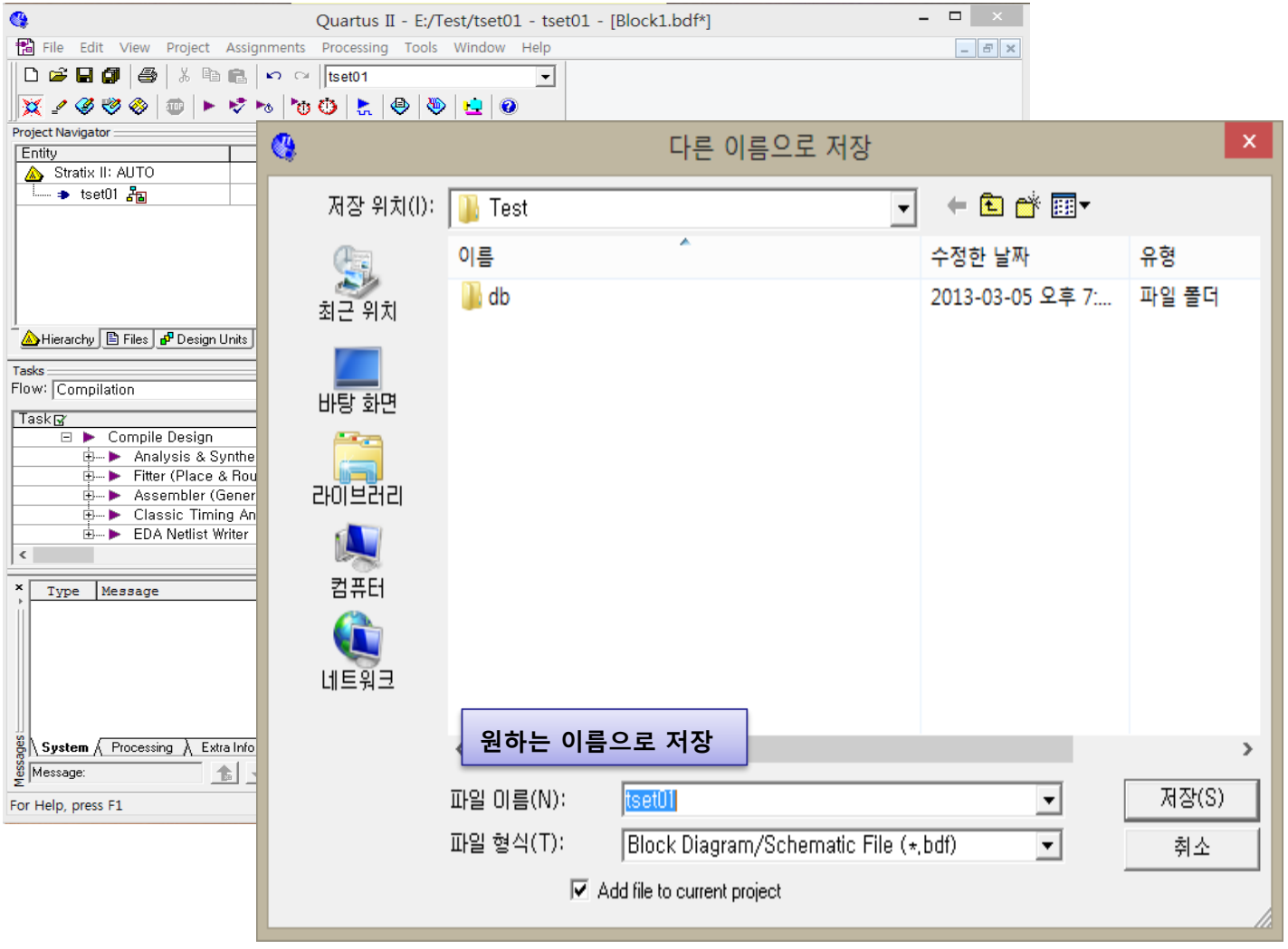


위와 같이 회로 구성 (output 추가 역시 동일한 방법, output 으로 검색)

Quartus II 사용법

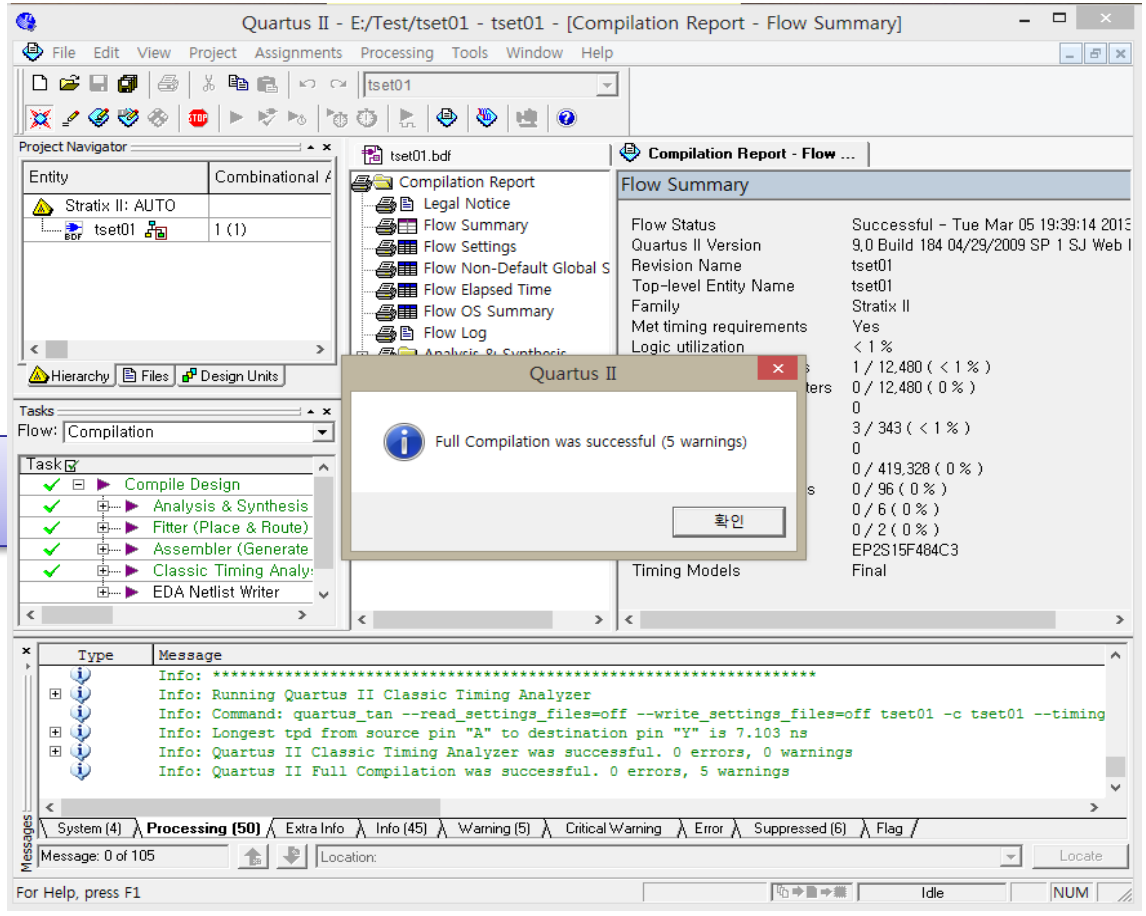


Quartus II 사용법



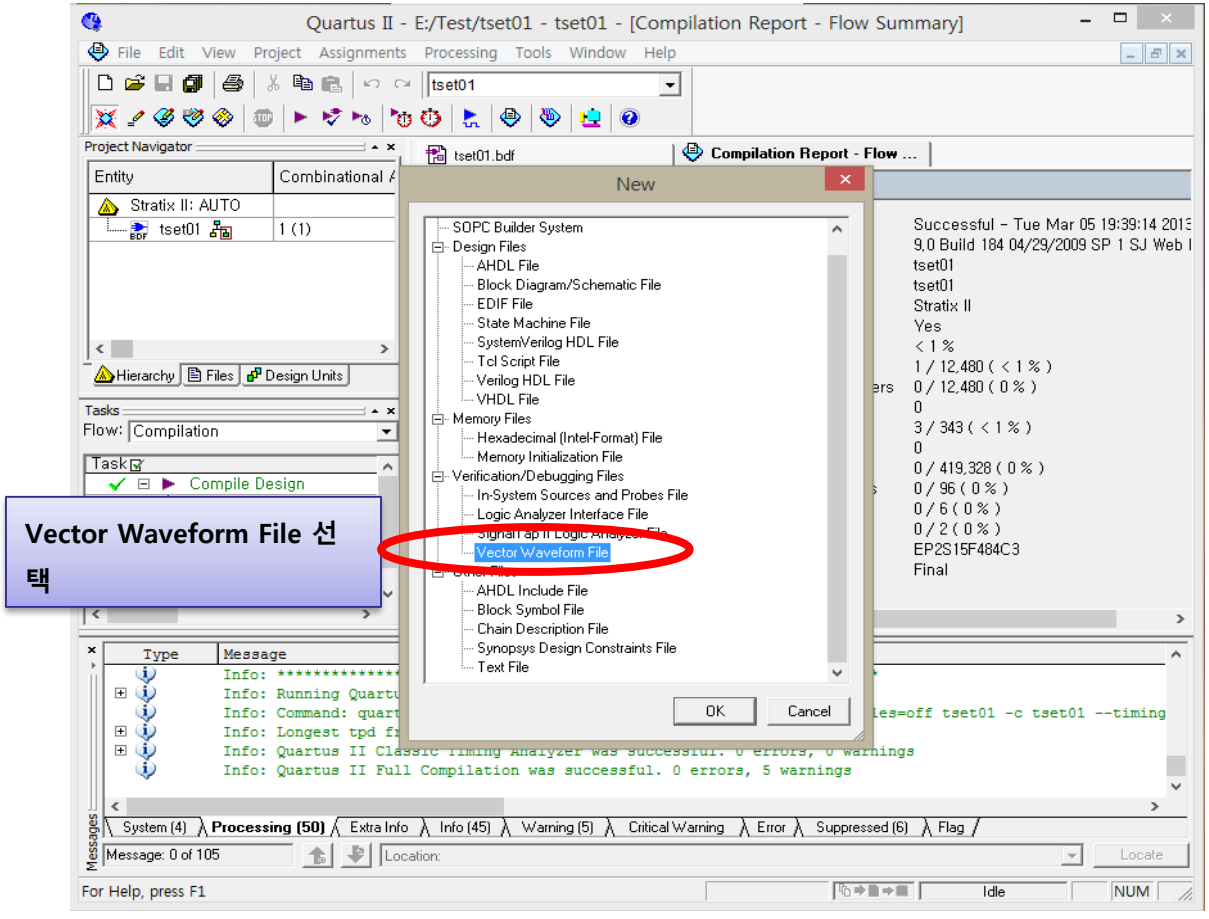
Quartus II 사용법

컴파일 중 각각의 진척도가 표시됨



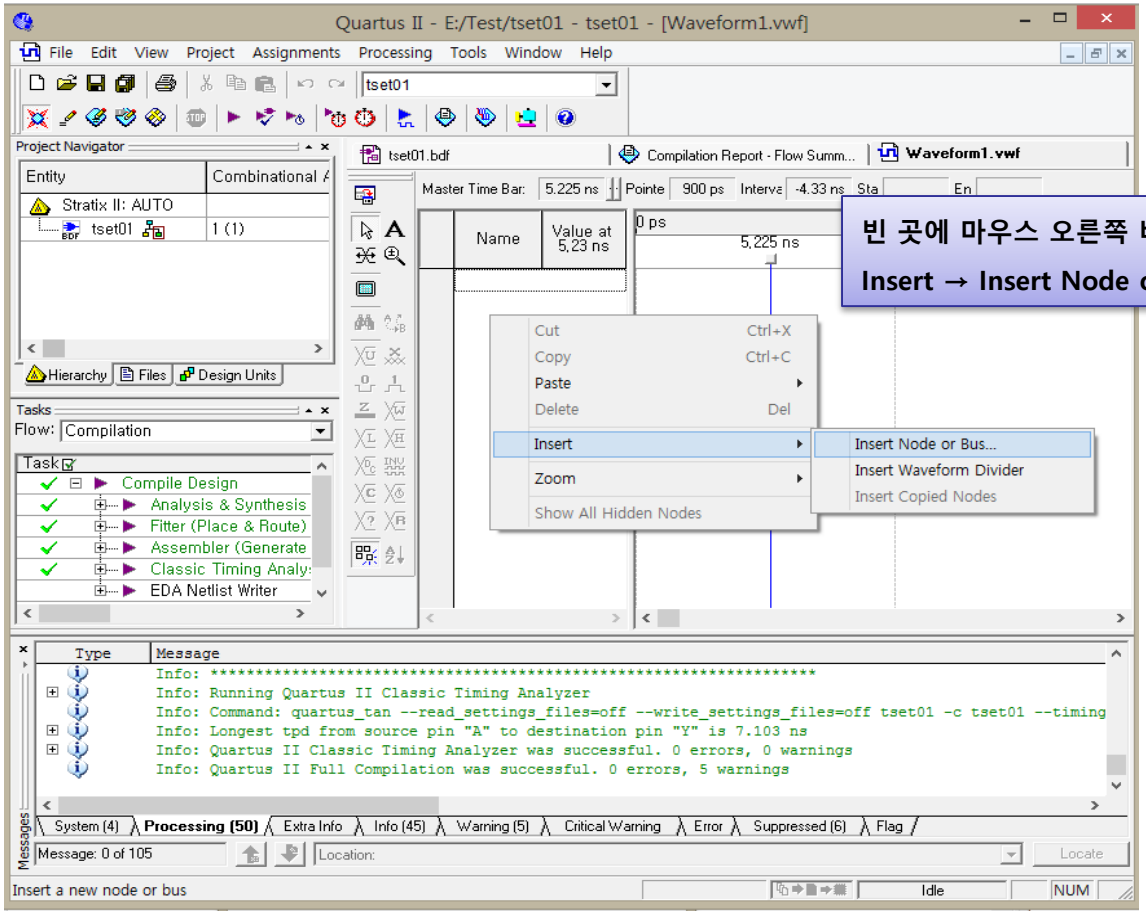
성공적으로 컴파일 완료

Quartus II 사용법

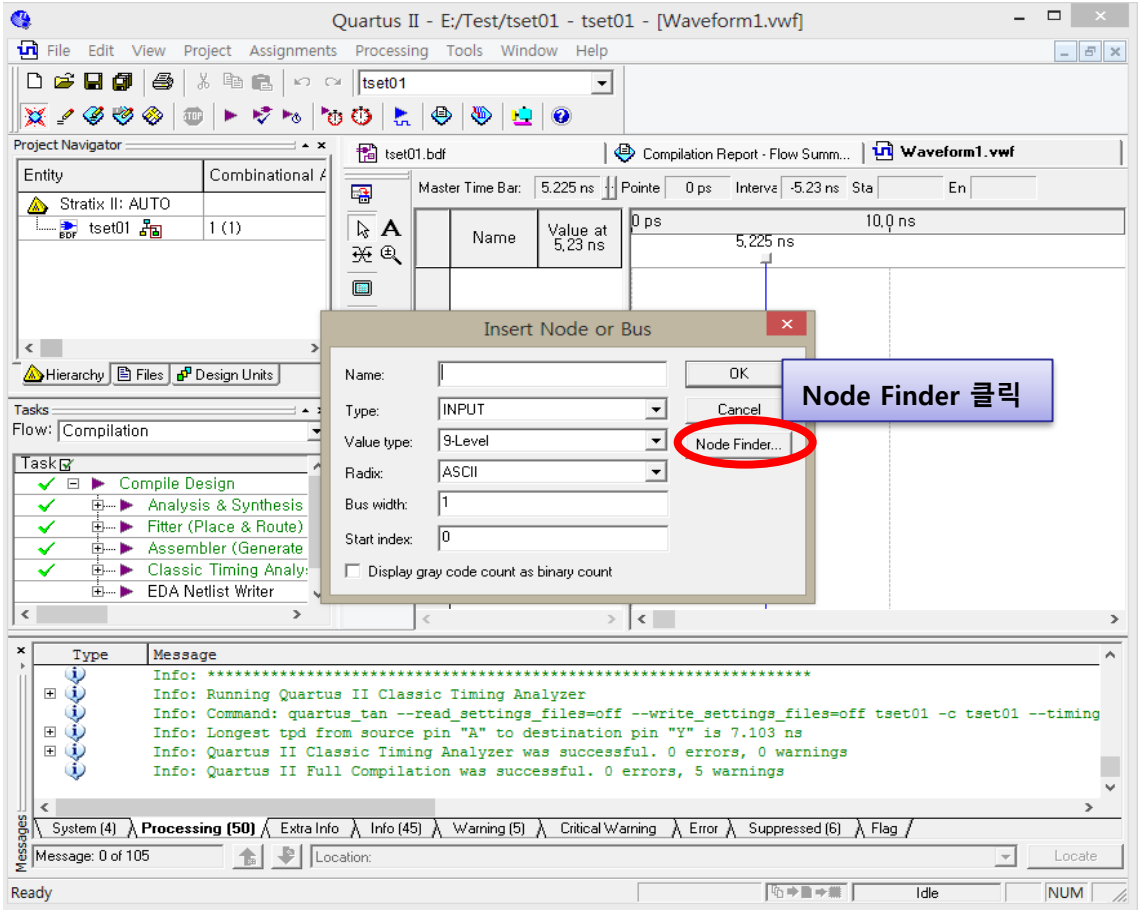


시뮬레이팅을 위해 File 메뉴 → New 실행

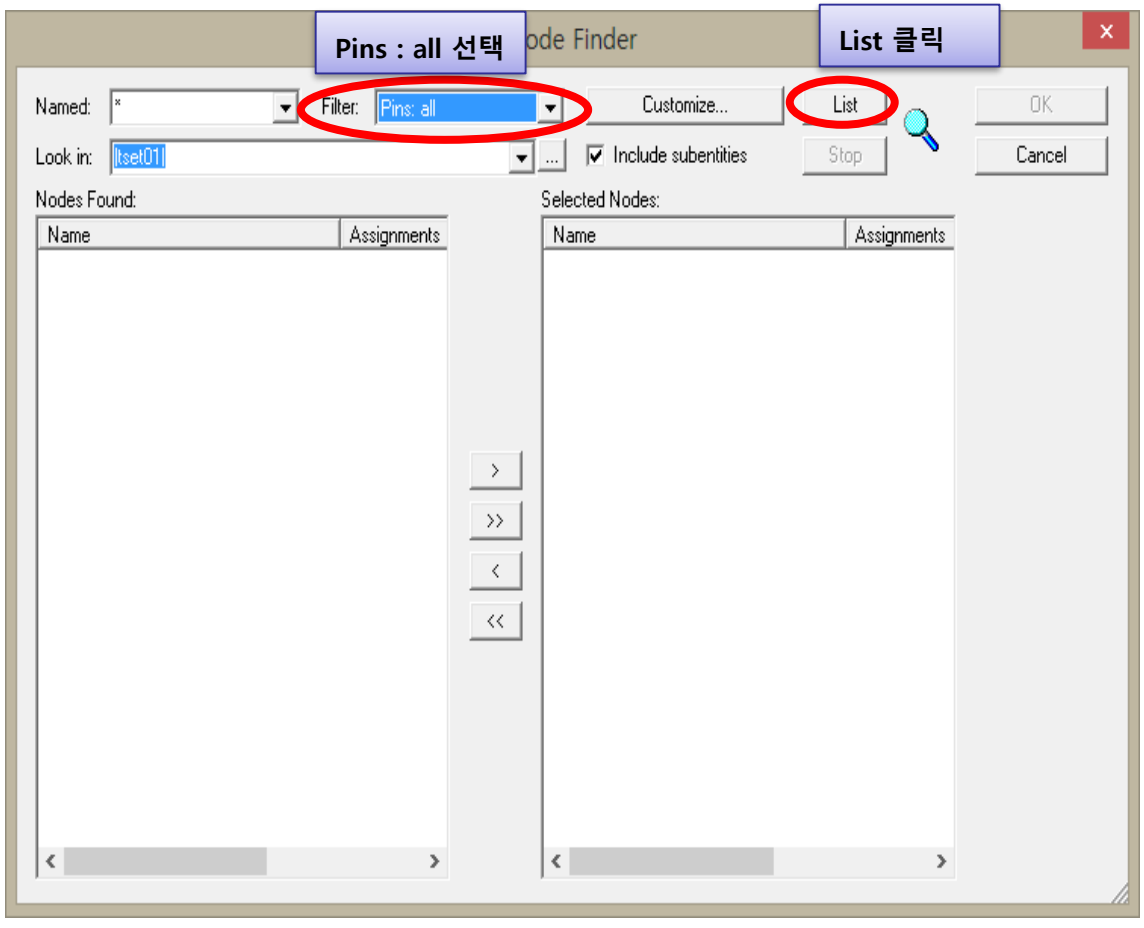
Quartus II 사용법



Quartus II 사용법

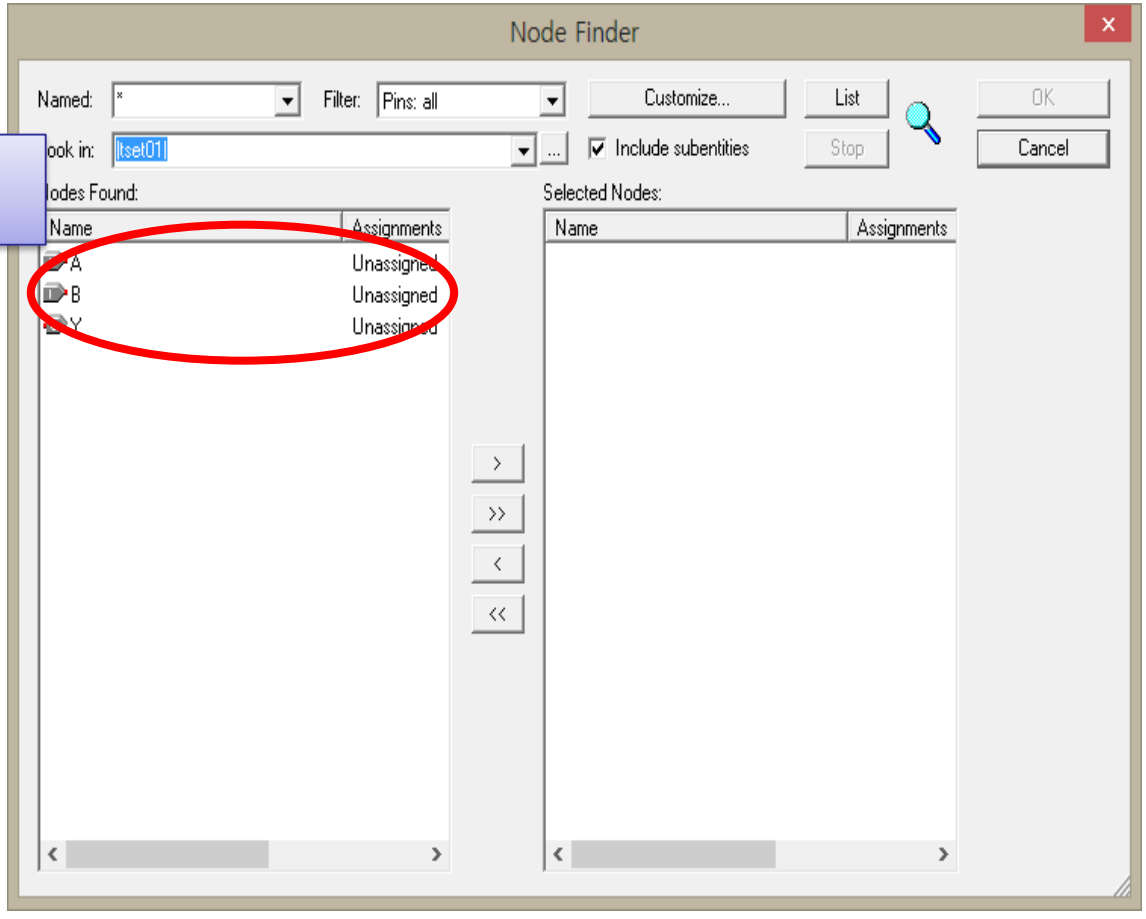


Quartus II 사용법

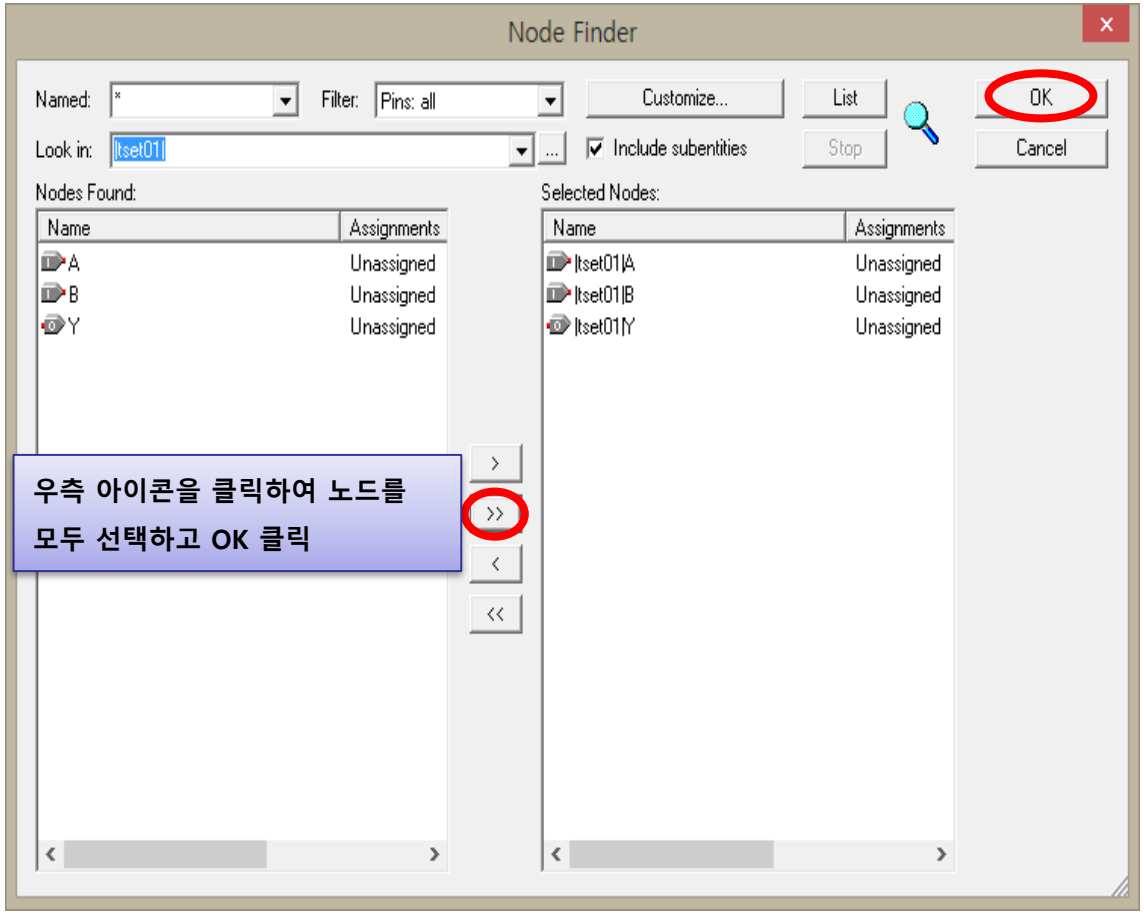


Quartus II 사용법

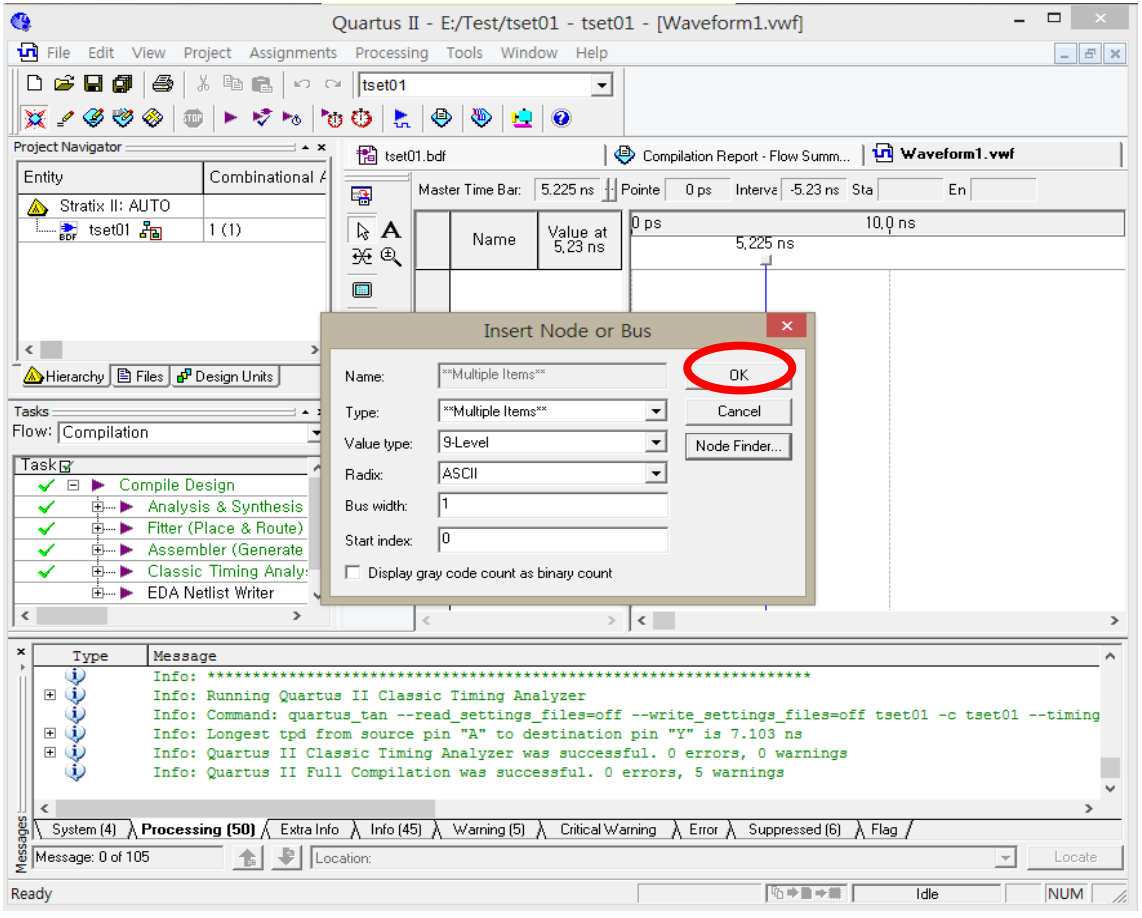
회로에서 쓰인 핀이 검색됨



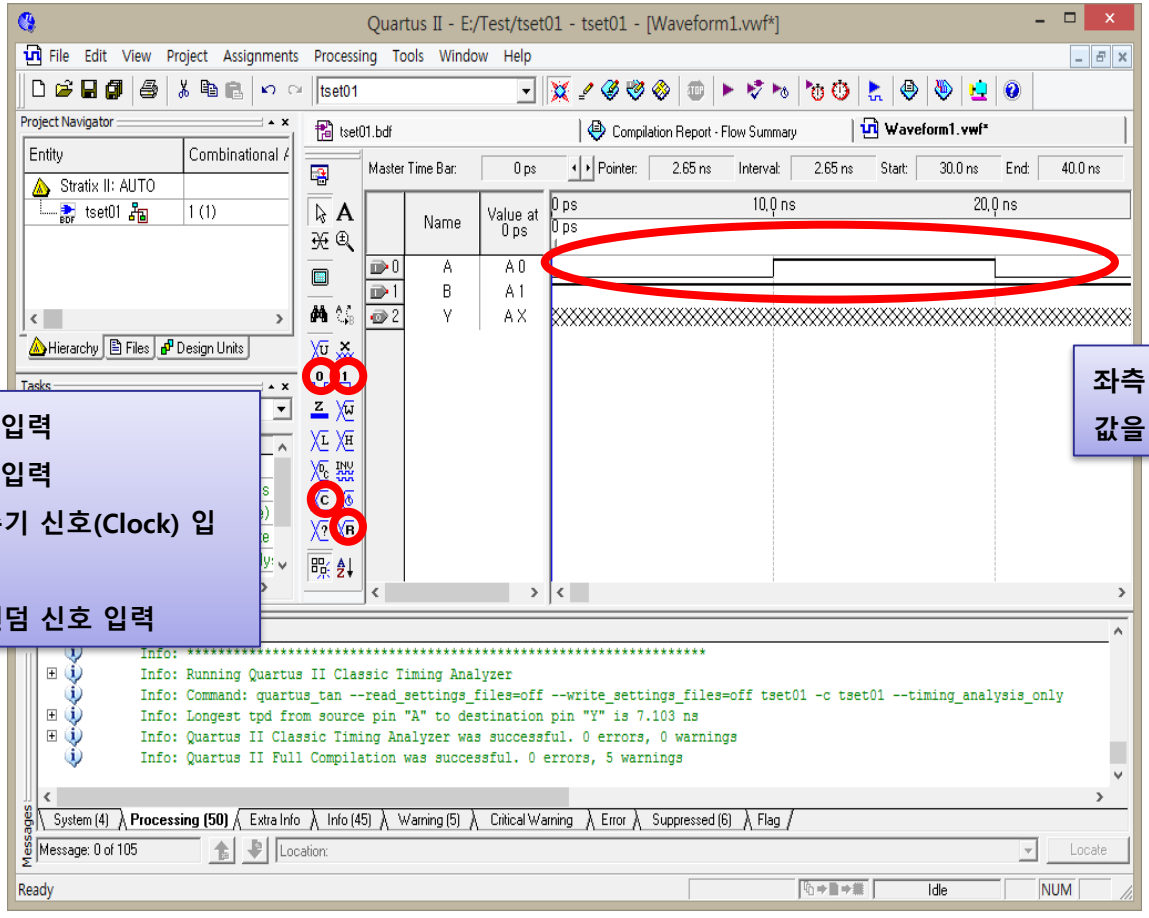
Quartus II 사용법



Quartus II 사용법



Quartus II 사용법



0 : 0 입력

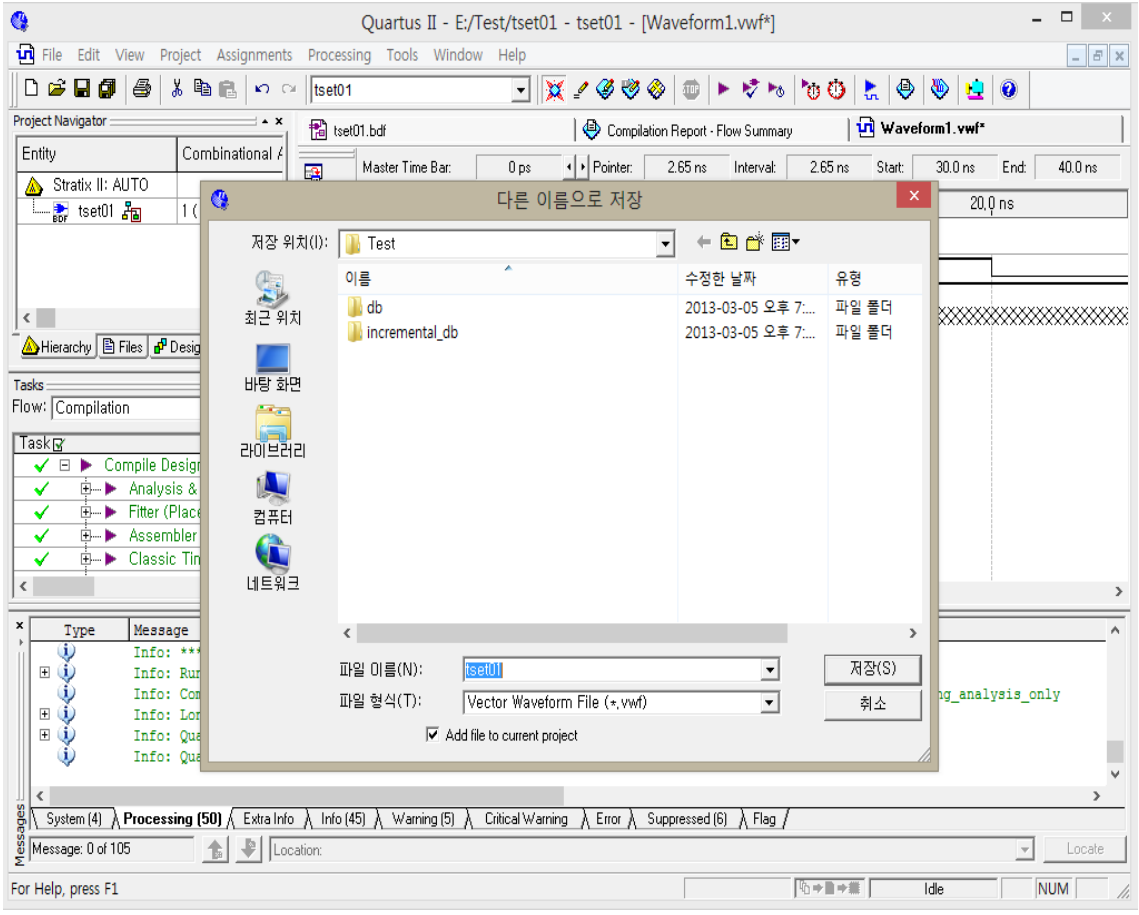
1 : 1 입력

C : 주기 신호(Clock) 입력

R : 랜덤 신호 입력

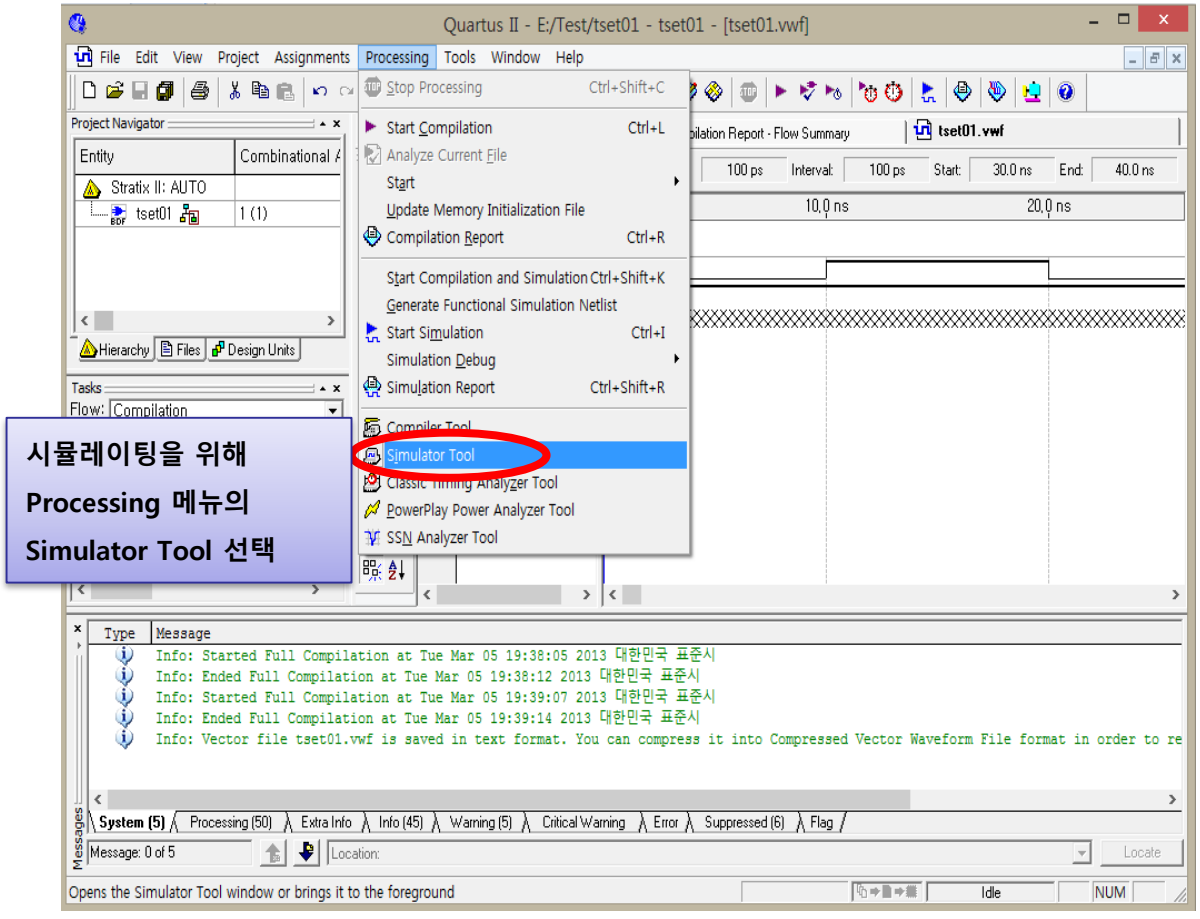
좌측 아이콘을 이용하여 입력 값을 임의 설정

Quartus II 사용법

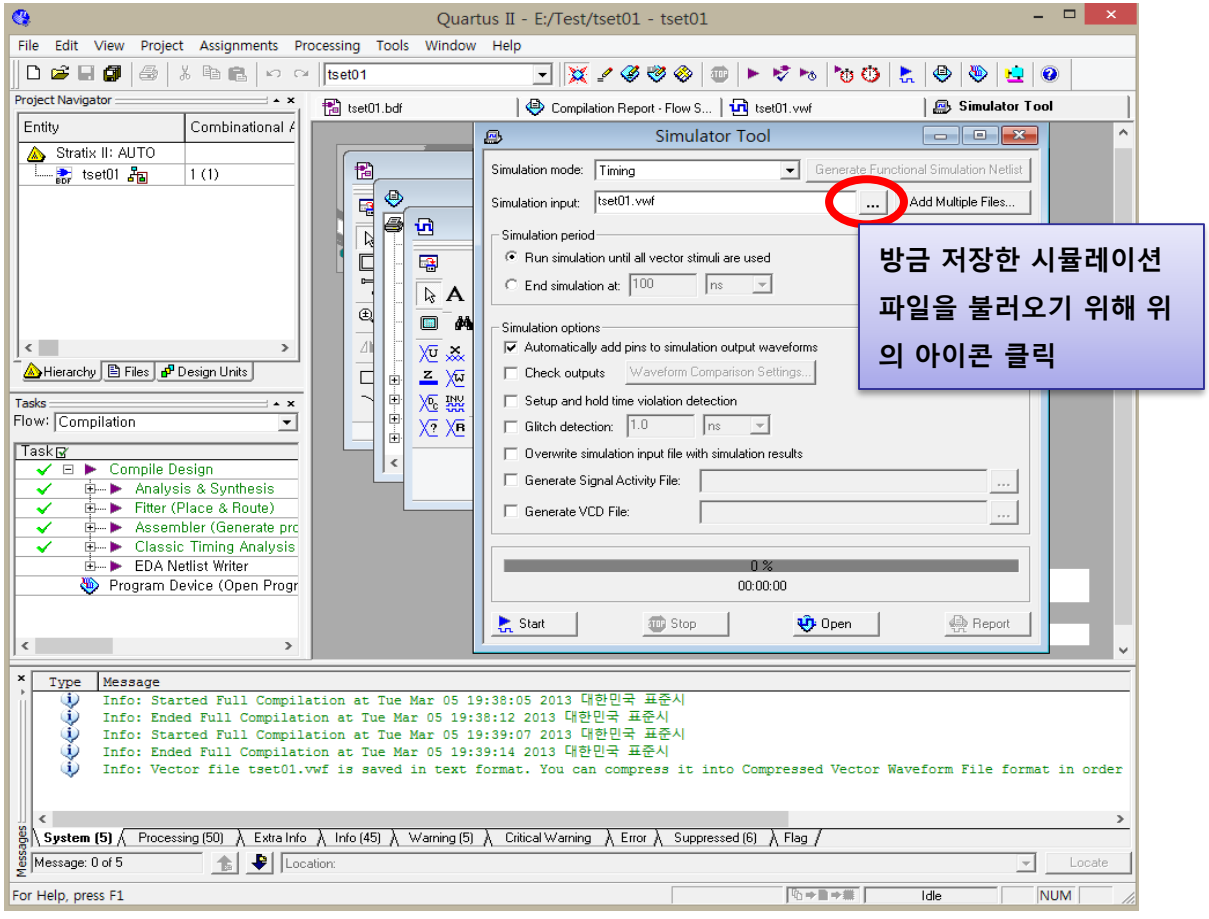


입력 값 설정 후에 File 메뉴 → Save 를 통해 원하는 이름으로 저장

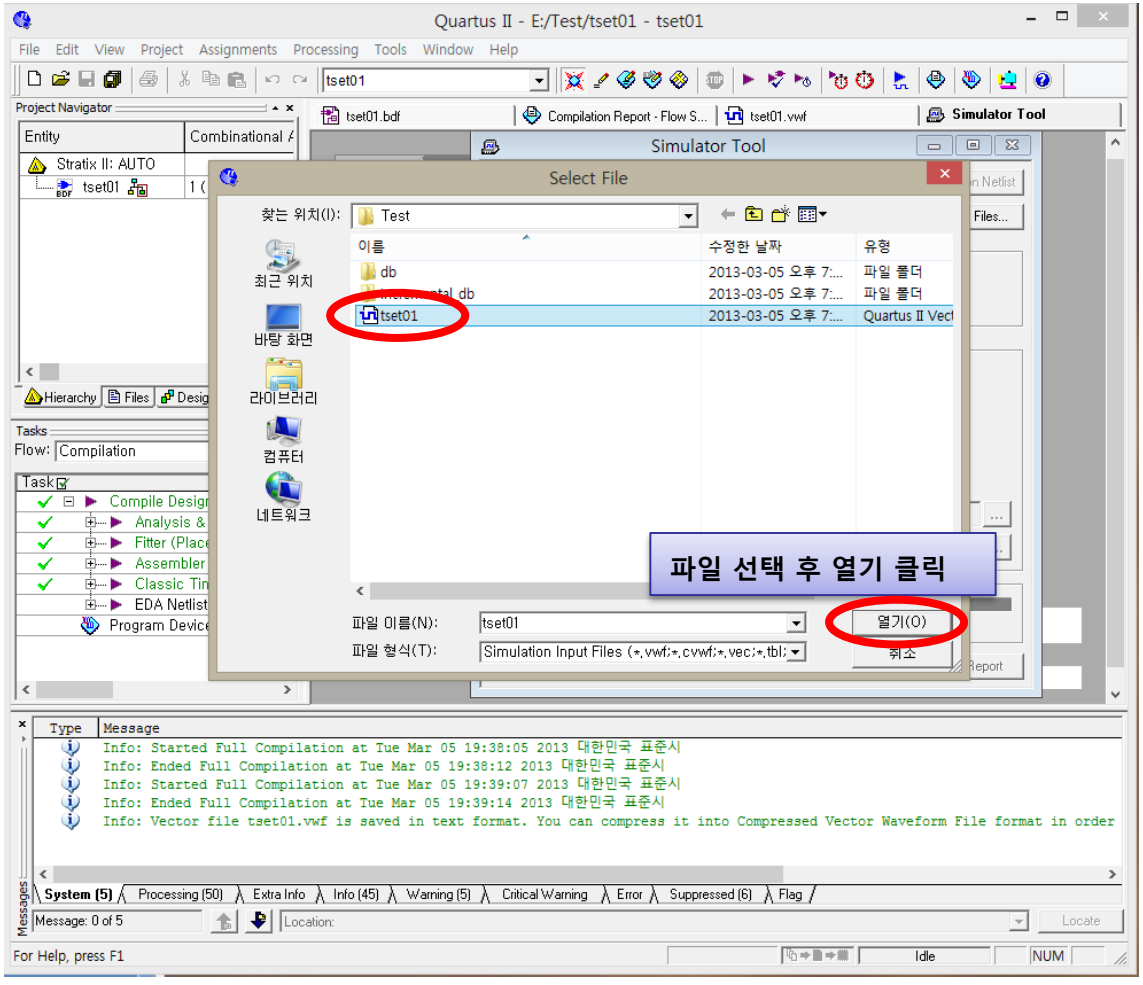
Quartus II 사용법



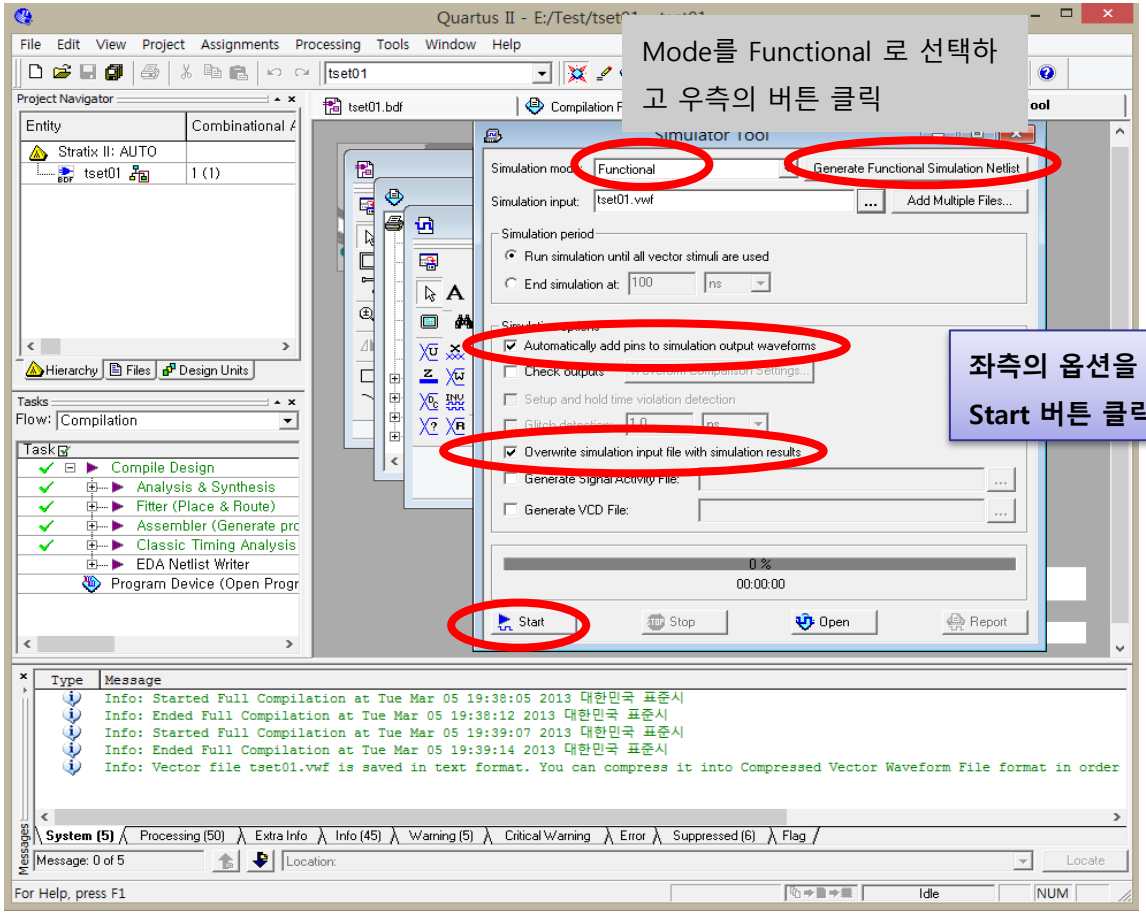
Quartus II 사용법



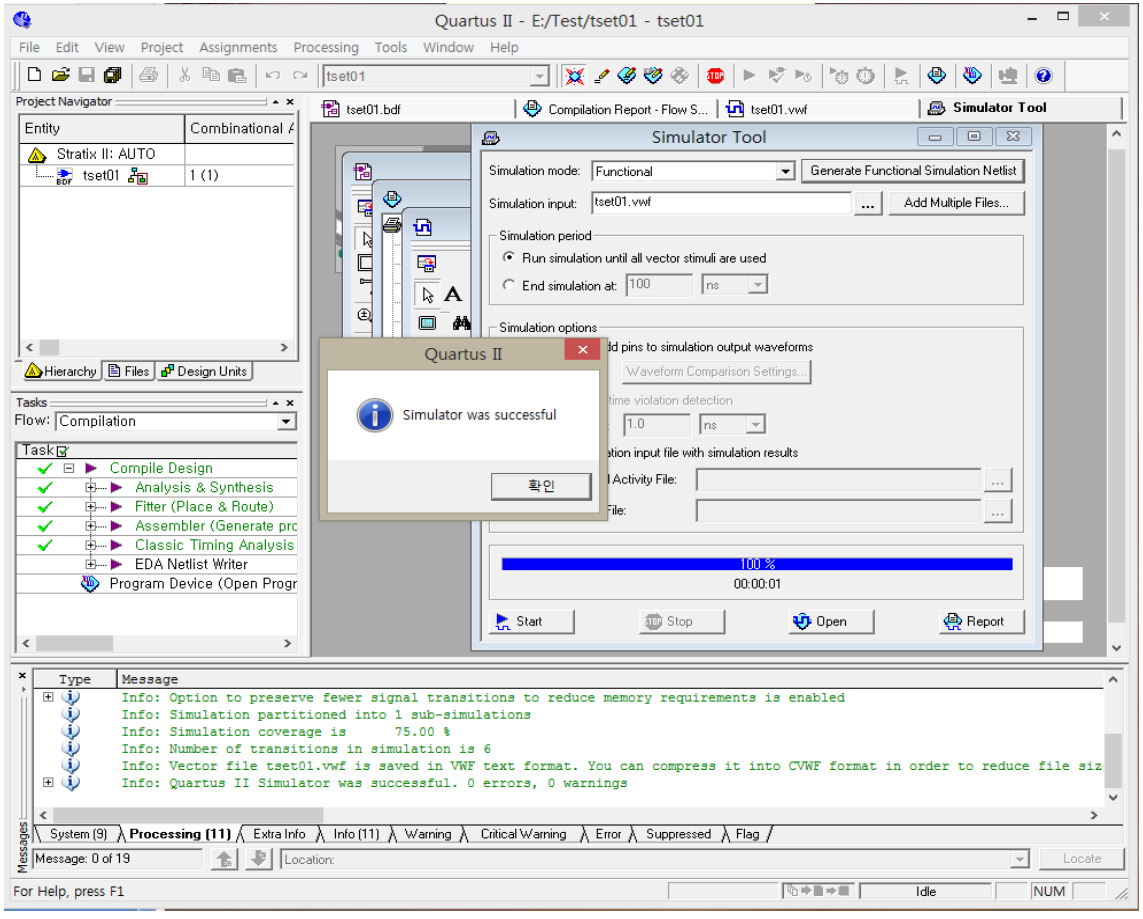
Quartus II 사용법



Quartus II 사용법

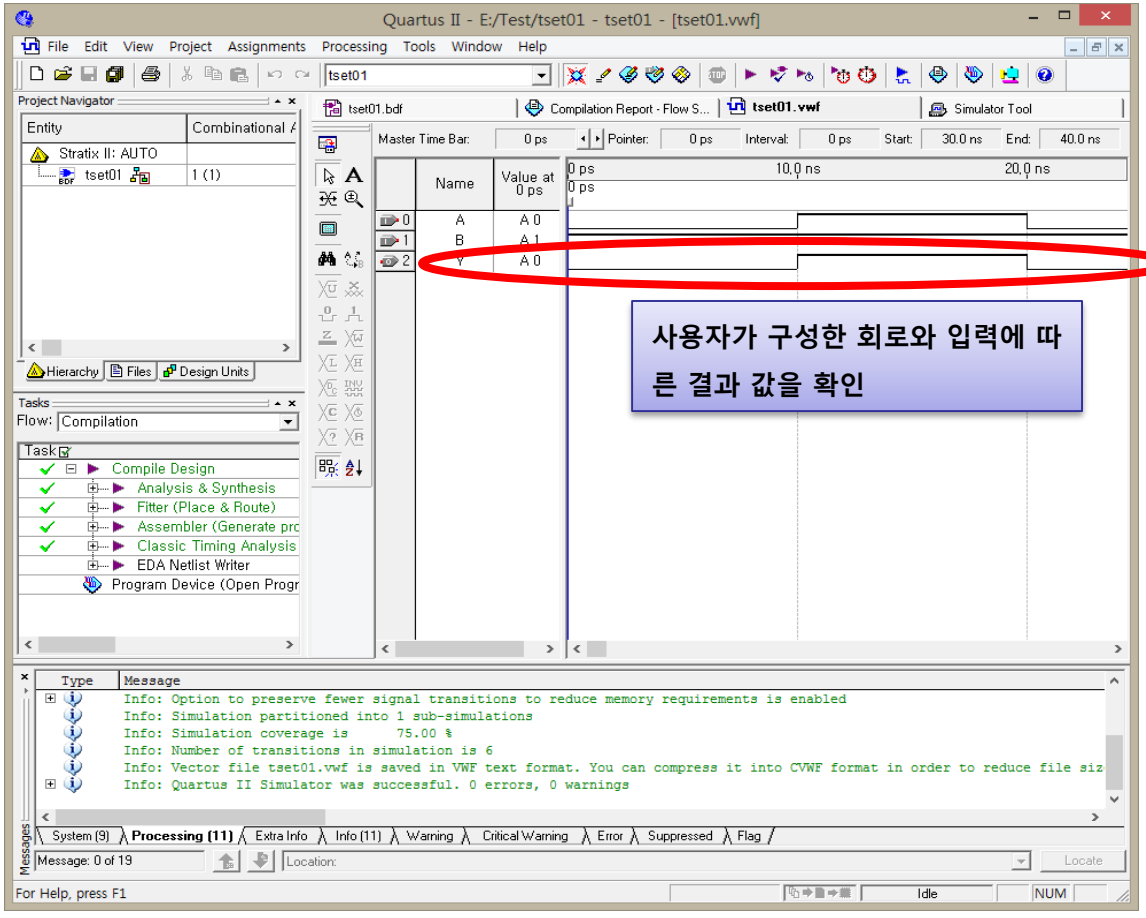


Quartus II 사용법



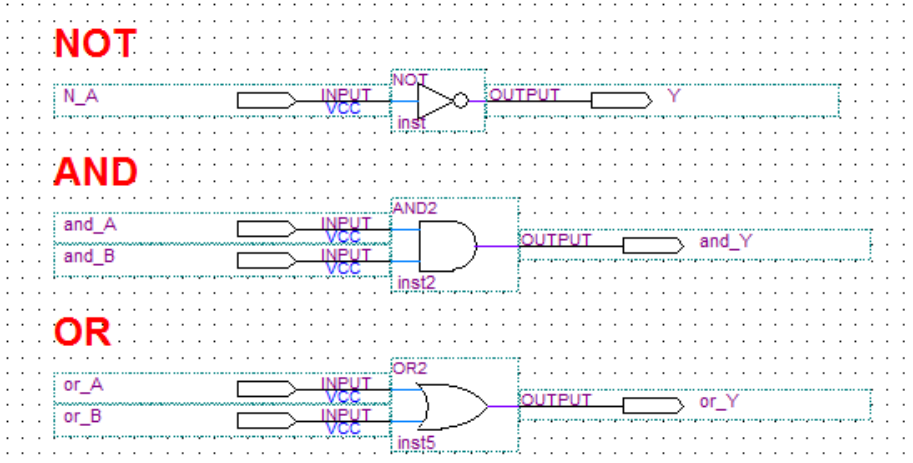
성공적으로 Simulator 완료

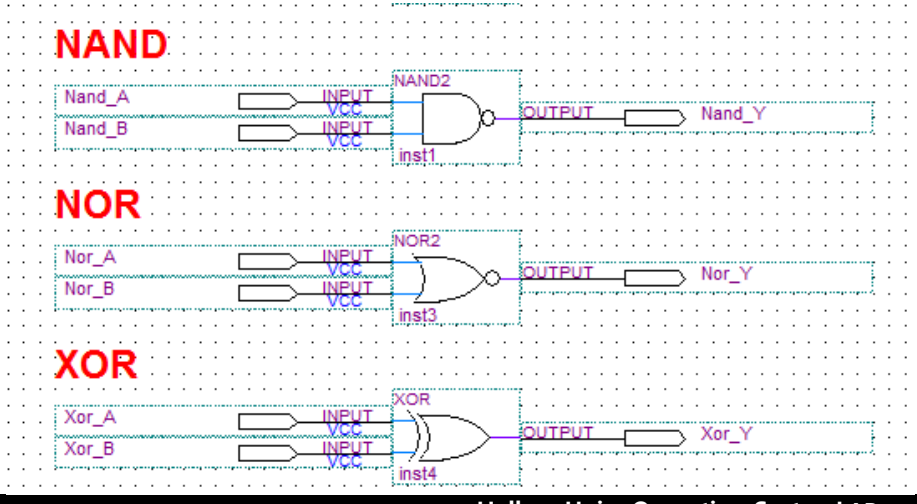
Quartus II 사용법



기본 논리 Gate 실습

- 다음의 6가지 논리 Gate를 그리시오.





실습 과제

- AND게이트를 사용하지 말고 XOR 구현하라

- 아래 논리식을 부울 대수 정리를 사용하여 간략화하고 회로, 진리표, 카르노맵을 그리시오.

$$Y = \overline{A}\overline{B}C + \overline{A}B\overline{C} + \overline{A}BC + A\overline{B}C + ABC$$

- 한글 파일로 정리 및 설명해서 e캠퍼스 과제로 제출