**[STEPS TO CREATE AN EXPERT SYSTEM](http://intelligence.worldofcomputing.net/ai-branches/steps-to-create-an-expert-system.html" \o "Permanent Link to Steps to Create an Expert System)**

The process of creation of an [expert system](http://intelligence.worldofcomputing.net/ai-branches/expert-systems.html) requires careful planning. It is common to acquire an expert systems tool, i.e., shell, instead of developing the inference engine from the scratch. The steps involved in the creation of [expert system](http://intelligence.worldofcomputing.net/ai-branches/expert-systems.html) are listed below.

Step 1: Select a domain and a particular task  
a) Choose a task that an expert can do well.  
b) The performance of the task should be related to both breadth and depth of[knowledge](http://intelligence.worldofcomputing.net/knowledge-representation/what-is-knowledge.html).  
c) The facts and rules should be stable.

Step 2: Select the expert system shell for implementation  
a) Choose the type of inference control required.  
b) Choose the type of pattern-matching capability required.  
c) Decide whether certainty factors are necessary  
d) Start building a prototype system

Step 3: Acquire initial knowledge about the domain and the task  
a) Identify the knowledge experts  
b) Select particular problems associated with each task  
c) Obtain, record and cross-check factual knowledge from both reference material and experts  
d) Obtain and record task-related rules from the experts and confirm them as far as possible  
e) Prepare a set of test cases

Step 4: Encode the [knowledge](http://intelligence.worldofcomputing.net/knowledge-representation/what-is-knowledge.html) using the appropriate representation  
a) Factual knowledge  
b) Inference knowledge  
c) Control knowledge

Step 5: Execute and test the [knowledge](http://intelligence.worldofcomputing.net/knowledge-representation/what-is-knowledge.html)  
a) Evaluate the test cases  
b) Be alert for problems with consistency and completeness

Step 6: Refine the current [knowledge](http://intelligence.worldofcomputing.net/knowledge-representation/what-is-knowledge.html) and acquire additional [knowledge](http://intelligence.worldofcomputing.net/knowledge-representation/what-is-knowledge.html)  
a) Revise the rules as necessary  
b) Modify any facts that need revision  
c) Augment the system with information on additional domain tasks and test again  
d) Repeat as often as necessary

Step 7: Complete any necessary interface code  
a) Demonstrate the system  
b) Make the system user-friendly

Step 8: Document the [expert system](http://intelligence.worldofcomputing.net/ai-branches/expert-systems.html)  
a) Provide on-line and hard-copy documentation as necessary  
b) Document the consultation portion especially well  
c) Document the [knowledge](http://intelligence.worldofcomputing.net/knowledge-representation/what-is-knowledge.html) portion to the degree necessary