



WID2001 KRR
GROUP 1 - 4

CRIMINAL LAW EXPERT SYSTEM

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OBJECTIVES

For Professional:

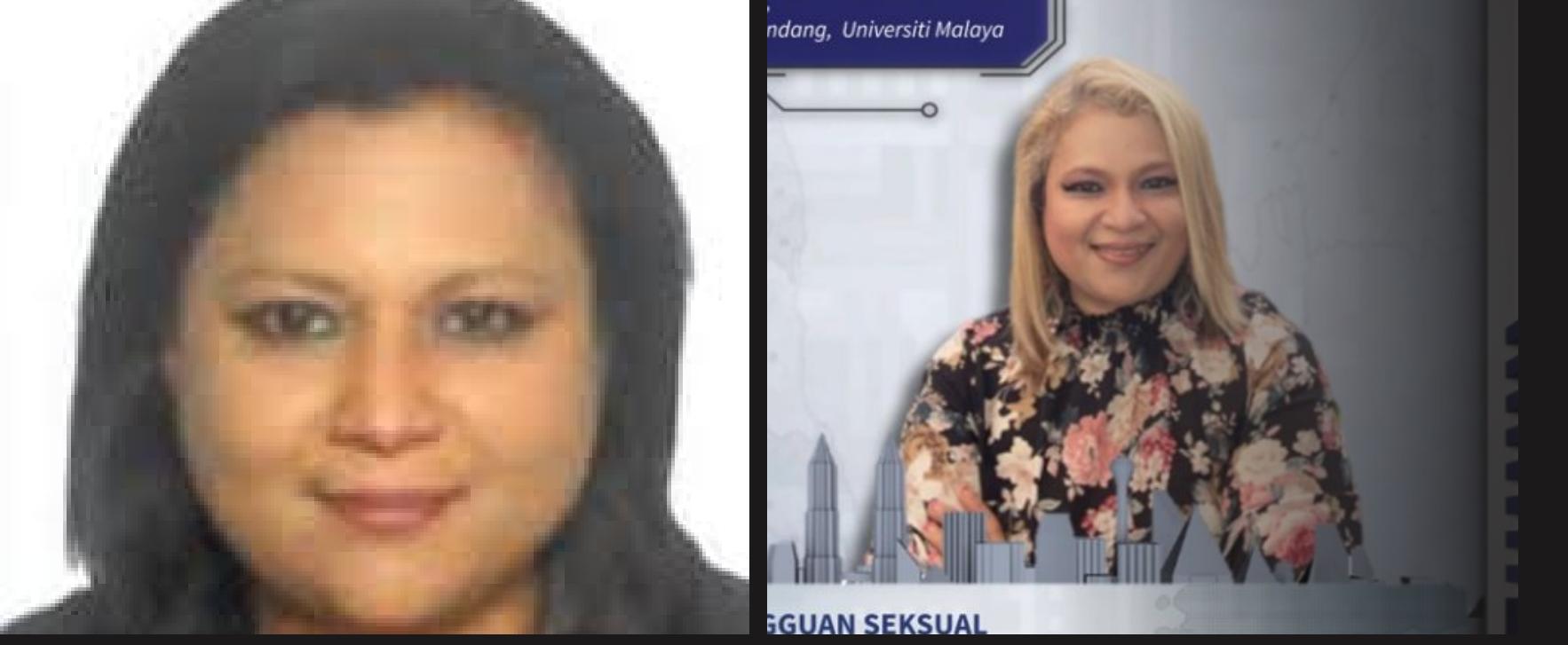
- **Supplementing Legal Expertise**
 - Preliminary research
 - Fact-checking
 - Legal analysis starting point
- **Efficiency and Time-Saving**
 - Quick & Accurate answers for **COMMON** legal questions.



For non-professional:

- **Scalability and Availability**
 - broader audience
 - 24/7
 - instant responses
- **Accessibility**
 - user-friendly interfaces for individuals without a legal background
- **Consistency and Reliability**
 - Predetermined rules & principles
- **Educational Purposes**
 - anyone
 - legal students
 - researchers
 - enhance learning experience





COLLABORATION: HUMAN EXPERT

DR. HAEZREENA BEGUM BINTI ABDUL HAMID
FACULTY OF LAW, UM

- Criminologist and Senior Lecturer at the Faculty of Law, UM.
- Previously a Teaching Fellow at Victoria University of Wellington, New Zealand.
- Qualified Advocate and Solicitor in the High Court of Malaya.
- Currently teaches Human Trafficking and Forensic Evidence to postgrad students.
- Also teaches Legal Drafting and Law Firm Management to undergrad students.
- Awarded a Grant by the United States Embassy in Kuala Lumpur to train law enforcers and protection officers on anti-human trafficking.
- Working on a human trafficking playbook for use by enforcement agencies.

ES-BUILDER WEB

- Expert System Shell
 - empty state knowledge base
 - built-in inference engine
 - built-in user interface
 - Easily accessible by auto-generated URL
 - Online MySQL Database
-
- Link to our ES:
[http://www.mcgoo.com.au/esbuilder/viewer/viewES.php?
es=c8d3d44eb6c3dbc82ef2c953c8d55387](http://www.mcgoo.com.au/esbuilder/viewer/viewES.php?es=c8d3d44eb6c3dbc82ef2c953c8d55387)

ES-Builder Web - Projects List

Registered: 23rd May 2023.
[Edit](#) [Settings](#) [Change Password](#) [Logout](#)

Your Projects:

#	Search	Title	UofD	Notes	Updated	Edit	Tree
48438		Criminal Law Expert System	Malaysia Penal Code	WID2001	30 May 2023 19:10 [843 nodes]		

Create a new project...4 spaces left. **

Restore a saved project from a backup file...

**** More projects and more useful features are available to Lite, School, School Pro, and Pro users.**
[Click here to view available subscriptions.](#)

Please Note: If you would like one of your projects to appear on the [Published Samples](#) page, you may email us at mcgoosoftware@gmail.com with details of the ES you wish to publish. McGoo Software reserves the exclusive right to decide whether or not a submitted Expert System will be added to the Public Samples page. If unsuccessful in the application, reasons will be given.

ES-Builder Web

[Criminal Law Expert System by KW L](#)

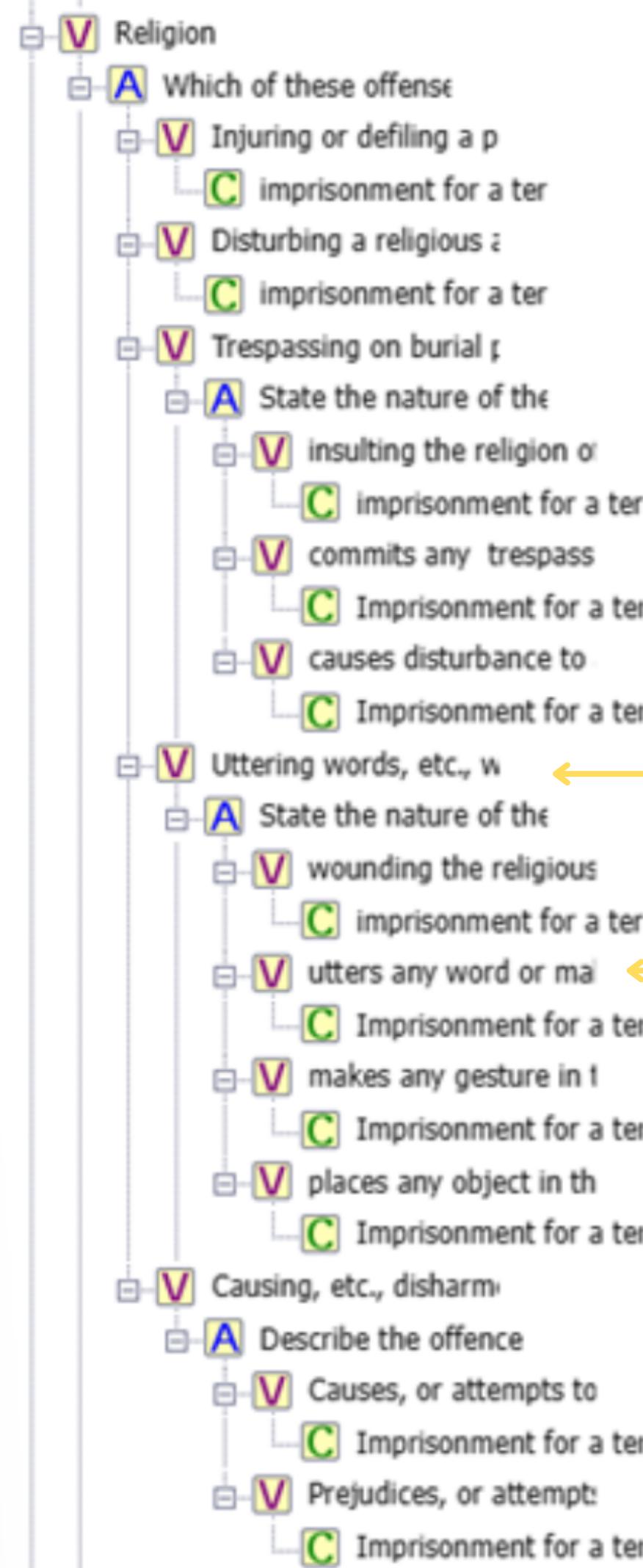
WID2001

Note: There are 254 possible conclusions in this expert system.

[Guilty? Innocent? Let's see.....](#)

[ES Knowledge Base](#) [ES Decision Tree](#) [ES Decision Table](#) [ES Attributes List](#)

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Attribute: It will be the question that ask user for input

Value: It will be the possible input that user can choose

Conclusion: the final decision/recommendation, in our case, it is Penalty

EXAMPLES OF KNOWLEDGE RULES

IF what is the case related? property

AND is defendant intentionally or purposefully taking possession? yes

AND is defendant take actions? yes but fail or not yet done

AND the objects to be taken are out of the consent of the authorities? yes

AND what is the type of property? movable

AND did the defendant put victim in fear? yes

AND the fear is instant? yes

AND how many person involved? 1

AND is the defendant belong to gang? no

THEN the Penalty is

Imprisonment: <=7y + fine.

IF what is the case related? property

AND is defendant intentionally or purposefully taking possession? yes

AND is defendant take actions? yes and success

AND the objects are taken out of the consent of the authorities? till now don't know who is owner/ occupier...

AND is the property considered valuable? yes

AND the defendant takes such property for the purpose of protecting it for, or of restoring it to the owner? no

AND is the defendant made a reasonable effort to search for the owner/ occupier? yes

THEN the Penalty is

No Penalty.

Explanation:

Penal Code Act 574

Chapter XVII - Offences Against Property

Section 393

Attempt to commit robbery

KNOWLEDGE BASE

- **Laws of Malaysia Act 574 Penal Code**

- Chapter XVII - Offences Against Property
- Chapter XV - Offences Relating To Religion
- Chapter VIII - Offences Against the Public Tranquility
- Chapter XV - Offences Relating to Terrorism
- Chapter XVI - Offences Against the Human Body



LAWS OF MALAYSIA

ONLINE VERSION OF UPDATED
TEXT OF REPRINT

Act 574

PENAL CODE

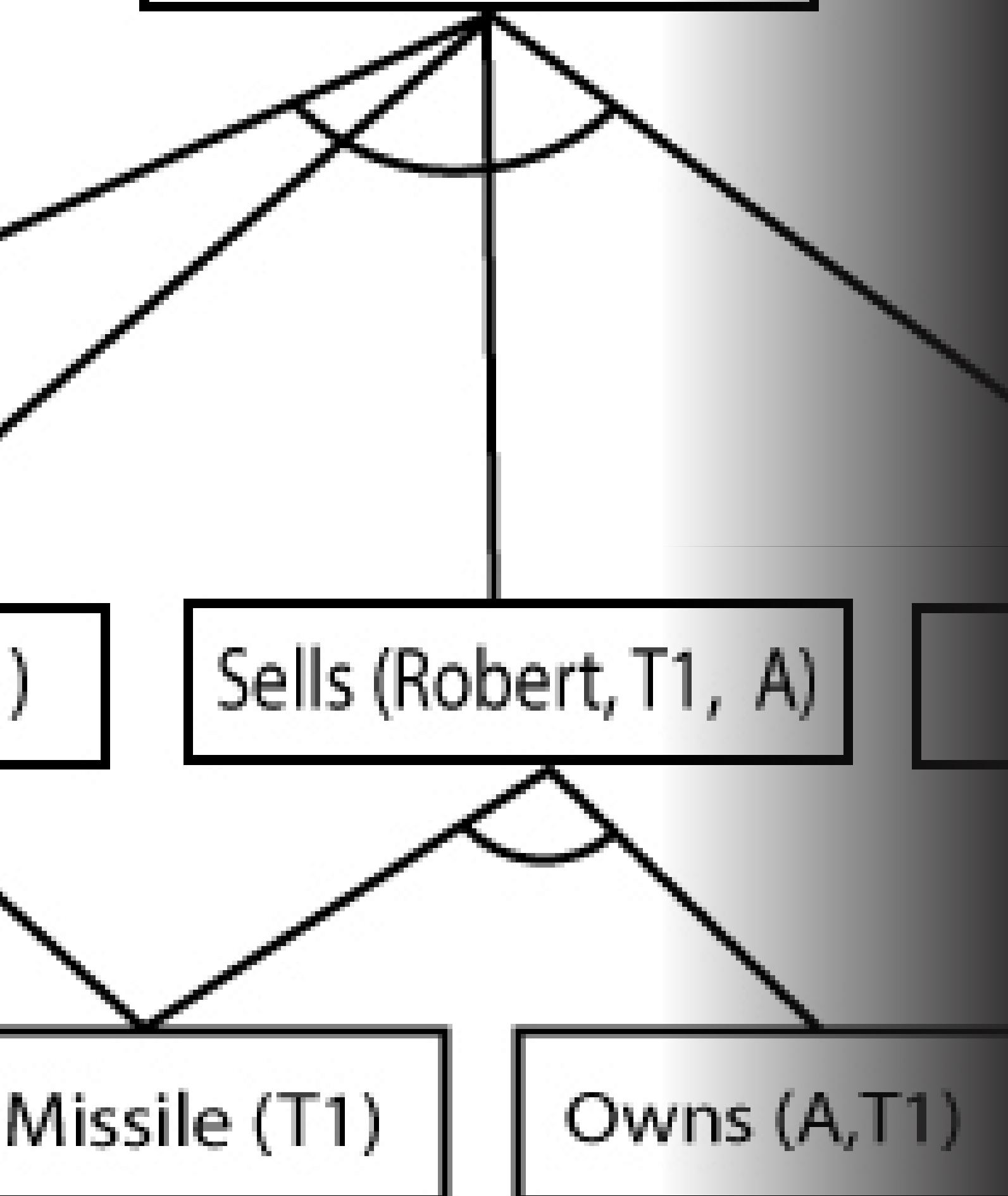
As at 1 February 2018

Expert System - Criminal Law Expert System by KW L

Knowledge Base Rules

#	Rule	Notes	Image
1	<p>IF what is the case related? property AND is defendant intentionally or purposefully taking possession? yes AND is defendant take actions? yes and success AND the objects are taken out of the consent of the authorities? yes AND what is the type of property? movable AND did the defendant put victim in fear? no AND is the defendant prepare to cause death or hurt? yes THEN the Penalty is Imprisonment: <= 10y + fine/ whipping .</p>	Penal Code Act 574 Chapter XVII - Offences Against Property Section 382 Theft after preparation made for causing death or hurt in order to commit theft	
2	<p>IF what is the case related? property AND is defendant intentionally or purposefully taking possession? yes AND is defendant take actions? yes and success AND the objects are taken out of the consent of the authorities? yes AND what is the type of property? movable AND did the defendant put victim in fear? no AND is the defendant prepare to cause death or hurt? no AND is the event occurred in dwelling house? yes AND is the defendant reoffending? yes THEN the Penalty is Imprisonment: <=10y + fine/ whipping.</p>	Penal Code Act 574 Chapter XVII - Offences Against Property Section 380 Theft in dwelling house	
3	<p>IF what is the case related? property AND is defendant intentionally or purposefully taking possession? yes AND is defendant take actions? yes and success AND the objects are taken out of the consent of the authorities? yes AND what is the type of property? movable AND did the defendant put victim in fear? no AND is the defendant prepare to cause death or hurt? no AND is the event occurred in dwelling house? yes AND is the defendant reoffending? no THEN the Penalty is Imprisonment: <=10y + fine.</p>	Penal Code Act 574 Chapter XVII - Offences Against Property Section 380 Theft in dwelling house	
4	<p>IF what is the case related? property AND is defendant intentionally or purposefully taking possession? yes AND is defendant take actions? yes and success AND the objects are taken out of the consent of the authorities? yes AND what is the type of property? movable AND did the defendant put victim in fear? no AND is the defendant prepare to cause death or hurt? no AND is the event occurred in dwelling house? no AND is the property stolen a motor vehicle? yes AND is the defendant reoffending? yes THEN the Penalty is Imprisonment: 1y - 7y + fine/ whipping.</p>	Penal Code Act 574 Chapter XVII - Offences Against Property Section 379, 379A, 382A Punishment for theft of a motor vehicle	

Criminal (Robert)



INFERENCE ENGINE: FORWARD CHAINING

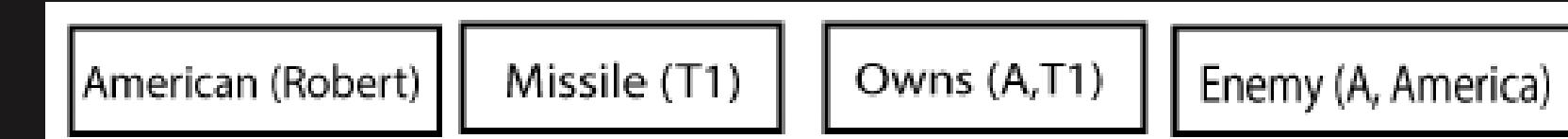
Forward chaining is a reasoning method used in inference engines, which are components of artificial intelligence systems that perform automated reasoning and decision-making tasks. Forward chaining is particularly employed in rule-based systems or expert systems.

In forward chaining, the inference engine starts with the available facts or data and applies a set of rules to derive new conclusions or facts. It uses a data-driven approach, where it iteratively combines the available information to infer new knowledge. The process continues until no further conclusions can be drawn or until a specific goal or condition is met.

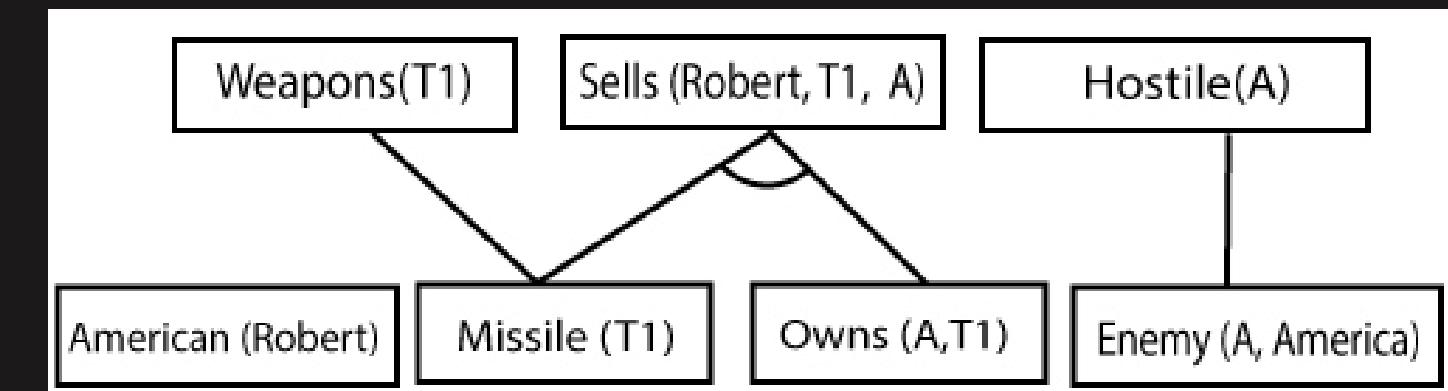
WITHOUT ES SYSTEM (MANUALLY)

Step 1: In the first step we will start with the known facts and will choose the sentences which do not have implications

ROBERT, AN AMERICAN, IS SELLING MISSILES TO A HOSTILE NATION, WHICH IS AN ENEMY TO AMERICA



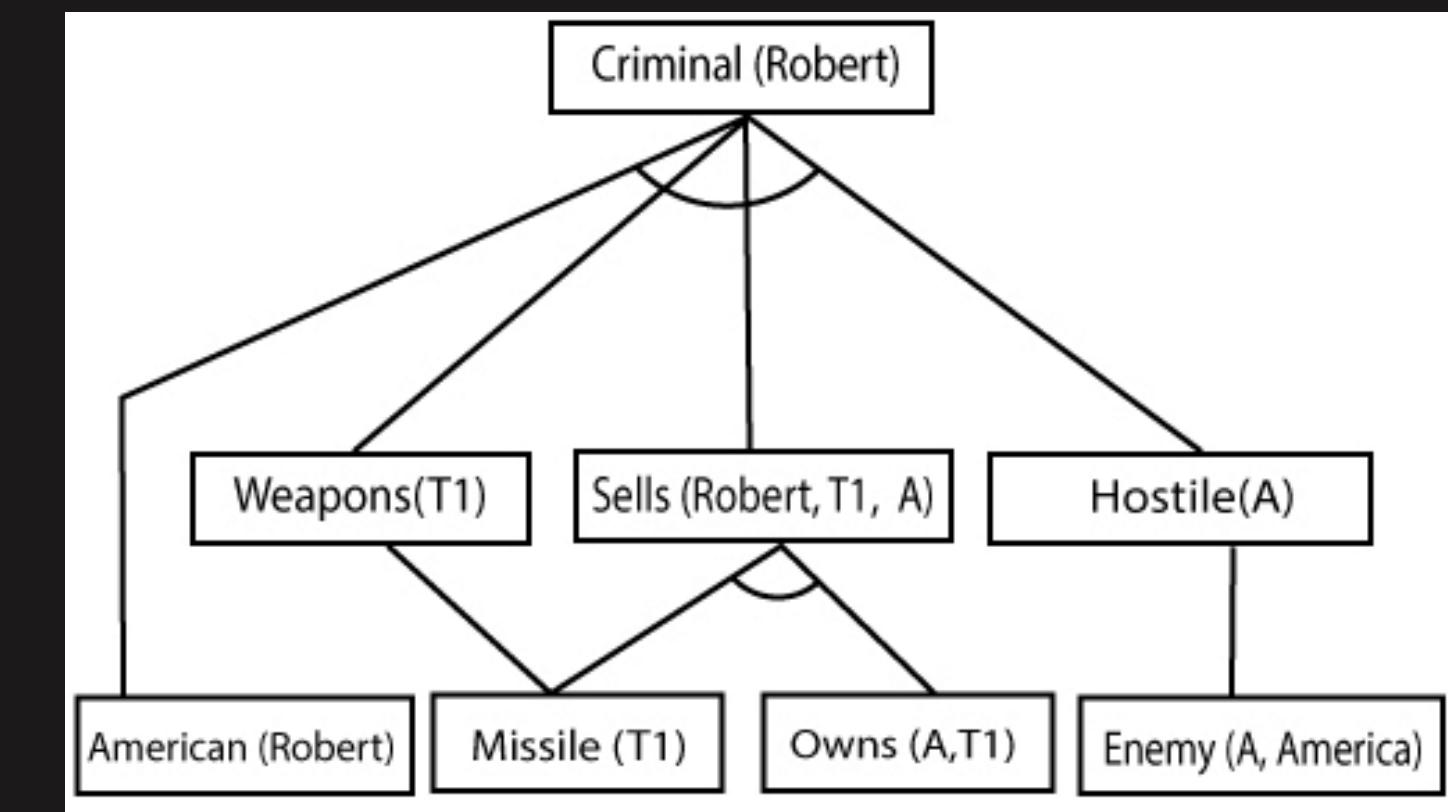
Step 2: At the second step, we will see those facts which infer from available facts and with satisfied premises



Step 3: Based on all the available facts, we reached our goal statement. And conclude whether he is a criminal or not

PROVE THAT "ROBERT IS CRIMINAL."

Conclusion: Robert is a criminal



CHAPTER XV - OFFENCES RELATING TO RELIGION

Step 1: In the first step we will start with the known facts (the type of offense)

- Religion
- Deliberate intent to wound somebody's religion

What is the case related?

- [Public Tranquility](#)
-  [Human Body](#)
-  [Religion](#)
-  [Property](#)
-  [Terrorism](#)

[Return to the Criminal Law Expert System Expert System Title Page](#)

Which of these offenses are relevant to you?

- [Trespassing on burial places, etc](#)
- [Injuring or defiling a place of worship with intent of insult](#)
- [Disturbing a religious assembly](#)
- [Uttering words, etc., with deliberate intent to wound the religion](#)
- [Causing, etc, disharmony, disunity, or feelings of enmity, hatred or ill will, or prejudicing](#)

Step 2: At the second step, we will see those facts which infer from available facts and with satisfied premises

- Does any of the stated nature of offence fulfil the action of the person?

State the nature of the offence

- [Wounding the religious feelings of any person](#)
- [Utters any word or makes any sound in the hearing of that person](#)
- [Makes any gesture in the sight of that person](#)
- [Places any object in the sight of that person](#)

Step 3: Based on all the available facts, we reached our goal statement.

- Conclude whether he committed a crime or not
- In this case: it is a crime and sentenced imprisonment

Based on the responses you have made:

The Penalty is Imprisonment for a term which may extend to one year or with fine or with both

**WITH ES SYSTEM
(AUTOMATICALLY)**

USER INTERFACE

The screenshot shows the 'ES-Builder Web' interface. At the top left is a navigation tree with 'ES-Builder' expanded, showing 'Expert' (selected), 'System', and 'Shell'. The title bar says 'ES-Builder Web' and 'Criminal Law Expert System by KW L'. Below the title is a note: 'Note: There are 254 possible conclusions in this expert system.' A search bar contains the placeholder 'Guilty? Innocent? Let's see.....' with a magnifying glass icon. A yellow hand cursor is pointing at the search bar. At the bottom are links: 'ES Knowledge Base', 'ES Decision Tree', 'ES Decision Table', and 'ES Attributes List'.

User must choose their related case ,options to choose from:

- Public Tranquility
- Human Body
- Religion
- Property
- Terrorism

First page of Expert System seen by the user

**Example: Crime-Owner/Occupied of land
on which an unlawful assembly is held**

The screenshot shows the 'ES-Builder Web' interface with the title 'Expert System - Criminal Law Expert System by KW L'. It displays a list of case-related categories:

- [Public Tranquility](#)
-  [Human Body](#)
- [Religion](#)
-  [Property](#)
- [Terrorism](#)

A yellow hand cursor is pointing at the 'Human Body' link. At the bottom is a link: 'Return to the Criminal Law Expert System Expert System Title Page'.

USER INTERFACE



Conclusion is presented to the user

User returns for first page of expert System

PUBLIC TRANQUILITY

PUBLIC TRANQUILITY

USER INTERFACE

Based on the responses you have made:
The Penalty is Imprisonment for a term which may extend up to six months and/or fine

Conclusion Notes:

Expert System Rule:

IF what is the case related? public Tranquility
AND what type of crime related to public tranquility was committed? unlawful Assembly
AND which crime related to unlawful assembly ? owner or occupier of land on which an unlawful assembly is held
THEN the Penalty is Imprisonment for a term which may extend up to six months and/or fine.

[Return to the Criminal Law Expert System Expert System Title Page](#)



Based on the responses you have made:
The Penalty is Imprisonment for a term which may extend up to one month or with fine which may extend up to one hundred ringgit or with both

Conclusion Notes:

Punishments with the use of phrase "may extend" means that level of punishment is not mandatory and can be lowered.

Expert System Rule:

IF what is the case related? public Tranquility
AND what type of crime related to public tranquility was committed? affray
THEN the Penalty is Imprisonment for a term which may extend up to one month or with fine which may extend up to one hundred ringgit or with both.

[Return to the Criminal Law Expert System Expert System Title Page](#)

Conclusion notes were added based
on Domain Expert's adviser



USER INTERFACE

Crime-
Kidnapping a
child to murder
them

ES-Builder Web

Expert System - Criminal Law Expert System by KW L

What is the case related?

- [Public Tranquility](#)
-  [Human Body](#) 
-  [Property](#)
- [Terrorism](#)

[Return to the Criminal Law Expert System Expert System Title Page](#)



HUMAN BODY

USER INTERFACE

ES-Builder Web

Which of these offences are relevant to you?

- [Rape](#)
- [Incest](#)
- [Unnatural Offences etc](#)
- [Hostage-Taking](#)
- [Wrongful Restraint and Wrongful Confinement](#)
- [Affecting Life of a Person such as Life or Death](#)
- [Causing Miscarriage or Injuries to Unborn Children](#)
- [Causing Hurt](#)
- [Criminal Force and Assault](#)
- [Kidnapping, Abduction, Slavery and Forced Labour](#)

Decision History:

Tip: Click on an attribute link above to return to that decision...

[Return to the Criminal Law Expert System Expert System Title Page](#)



ES-Builder Web

Expert System

Does the offence involve kidnapping/abduction, slavery, prostitution or forced labour?

- [Slavery](#)
- [Prostitution](#)
- [Forced Labour](#)
- [Kidnapping/Abduction](#)

Decision History:

Which of these offences are relevant to you?	Kidnapping, Abduction, Slavery and Forced Labour
--	--

Tip: Click on an attribute link above to return to that decision...

[Return to the Criminal Law Expert System Expert System Title Page](#)



ES-Builder Web

Expert System - Criminal Law Expert System by KW L

Based on the responses you have made:
The Penalty is Death or imprisonment for a term which may extend to thirty years and shall, if he/she is not sentenced to death, also be liable to whipping.

Conclusion Notes:

Expert System Rule:

IF what is the case related? human Body
AND which of these offences are relevant to you? kidnapping, Abduction, Slavery and Forced Labour
AND does the offence involve kidnapping/abduction, slavery, prostitution or forced labour? kidnapping/Abduction
AND state the situation. kidnapping or abducting in order to murder
THEN the Penalty is Death or imprisonment for a term which may extend to thirty years and shall, if he/she is not sentenced to death, also be liable to whipping..

[Return to the Criminal Law Expert System Expert System Title Page](#)



ES-Builder Web

Expert System - Crim

State the situation.

- [Kidnapping or abducting child under ten years with intent to steal movable property from the person of such child](#)
- [Kidnapping or abducting with intent secretly and wrongfully to confine a person](#)
- [Kidnapping or abducting a woman to compel her marriage, etc](#)
- [Kidnapping in general](#)
- [Kidnapping or abducting in order to murder](#)
- [Kidnapping or abducting in order to subject a person to grievous hurt, slavery, etc.](#)

Decision History:

Which of these offences are relevant to you?	Kidnapping, Abduction, Slavery and Forced Labour
Does the offence involve kidnapping/abduction, slavery, prostitution or forced labour?	Kidnapping/Abduction

Tip: Click on an attribute link above to return to that decision...

[Return to the Criminal Law Expert System Expert System Title Page](#)



USER INTERFACE

Religion- making
certain gestures
that insult
someone's
religion

ES-Builder Web

Expert System - Criminal Law Expert System by KW L

What is the case related?

- [Public Tranquility](#)
-  [Human Body](#)
-  [Religion](#)
-  [Property](#)
- [Terrorism](#)

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USER INTERFACE

ES-Builder Web

Expert System - Criminal Law

Which of these offenses are relevant to you?

- [Trespassing on burial places, etc](#)
- [Injuring or defiling a place of worship with intent of insult](#)
- [Disturbing a religious assembly](#)
- [Uttering words, etc., with deliberate intent to wound the religion](#) 
- [Causing, etc., disharmony, disunity, or feelings of enmity, hatred or ill will, or prejudicing](#)

Decision History:

What is the case related?	Religion
---------------------------	----------

Tip: Click on an attribute link above to return to that decision...

[Return to the Criminal Law Expert System Expert System Title Page](#)

ES-Builder Web

Expert System - Criminal Law

Which of these offenses are relevant to you?

- [Trespassing on burial places, etc](#)
- [Injuring or defiling a place of worship with intent of insult](#)
- [Disturbing a religious assembly](#)
- [Uttering words, etc., with deliberate intent to wound the religion](#) 
- [Causing, etc., disharmony, disunity, or feelings of enmity, hatred or ill will, or prejudicing](#)

Decision History:

What is the case related?	Religion
---------------------------	----------

Tip: Click on an attribute link above to return to that decision...

[Return to the Criminal Law Expert System Expert System Title Page](#)

RELIGION

ES-Builder Web

Expert System - Criminal Law

State the nature of the offence

- [Wounding the religious feelings of any person](#)
- [Utters any word or makes any sound in the hearing of that person](#)
- [Makes any gesture in the sight of that person](#) 
- [Places any object in the sight of that person](#)

Decision History:

What is the case related?	Religion
Which of these offenses are relevant to you?	Uttering words, etc., with deliberate intent to wound the religion

Tip: Click on an attribute link above to return to that decision...

[Return to the Criminal Law Expert System Expert System Title Page](#)



USER INTERFACE

Property- the doors of the house were set on fire, however defendant didnt purposely take any possession

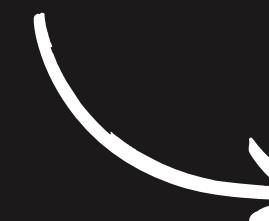
ES-Builder Web

Expert System - Criminal Law Expert System by KW L

What is the case related?

- [Public Tranquility](#)
-  [Human Body](#)
-  [Property](#) 
- [Religion](#)
- [Terrorism](#)

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USER INTERFACE

ES-Builder Web

Is the defendant intent to cause damage to property?

(Also considered when the defendants know his action will cause damage.
The property can belong to any person, the damage also can be to any person. (Even defendant himself)
The wrongful loss/ damage can be to the public/ any person.
The damage to property:
i. destroys
ii. diminishes its value or utility
iii. affects it injuriously
)

• Yes 
• No 

Decision History:

What is the case related?	Property
Tip: Click on an attribute link above to return to that decision...	

[Return to the Criminal Law Expert System Expert System Title Page](#)

PROPERTY

ES-Builder Web

Is defendant intentionally or purposefully taking possession?

(Even when defendant himself think the action is wrong.)

• Yes
• No 

Decision History:

What is the case related?	Property
Tip: Click on an attribute link above to return to that decision...	

[Return to the Criminal Law Expert System Expert System Title Page](#)

USER INTERFACE

ES-Builder Web

Is the defendant use fire or explosive substance?

- Yes 
- No

Decision History:

What is the case related?	Property
Is defendant intentionally or purposefully taking possession?	No
Is the defendant intent to cause damage to property?	Yes
What is the categories of the property?	Others

Tip: Click on an attribute link above to return to that decision...

Based on the responses you have made:
The Penalty is Imprisonment: <= 20y + fine

Conclusion Notes:
Penal Code Act 574
Chapter XVII - Offences Against Property
Section 436
Mischief by fire or explosive substance with intent to destroy a house, etc.

Expert System Rule:

IF what is the case related? property
AND is defendant intentionally or purposefully taking possession? no
AND is the defendant intent to cause damage to property? yes
AND what is the categories of the property? others
AND is the defendant use fire or explosive substance? yes
AND is the property a house? yes
THEN the Penalty is Imprisonment: <= 20y + fine.

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PROPERTY

ES-Builder Web

Is the property a house?

- Yes 
- i. place of worship
ii. for the administration of justice
iii. for the transaction of public affairs
iv. for education
v. for art
vi. for public use or ornament
vii. as a human dwelling
viii. as a place for the custody of property
ix. any government facility
- No

Decision History:

What is the case related?	Property
Is defendant intentionally or purposefully taking possession?	No
Is the defendant intent to cause damage to property?	Yes
What is the categories of the property?	Others
Is the defendant use fire or explosive substance?	Yes

Tip: Click on an attribute link above to return to that decision...

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USER INTERFACE

Terrorism- they
are a member of
a terrorist group

ES-Builder Web

Expert System - Criminal Law Expert System by KW L

What is the case related?

- [Public Tranquility](#)
-  [Human Body](#)
- [Religion](#)
-  [Property](#)
- [Terrorism](#)


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USER INTERFACE

ES-Builder Web

ES-Builder
A Expert
V System
C Shell

State the offence

- [Commiting terrorist acts](#)
- [Providing devices to terrorist groups](#)
- [Providing training & instruction to terrorist groups](#)
- [Receives training & instruction from terrorist groups](#)
- [Attendance at a place used for terrorist training](#)
- [Inciting, promoting or soliciting property for the commission of terrorist acts](#)
- [Directing activities of terrorist groups](#)
- [Soliciting or giving support to terrorist](#)
- [Member of a terrorist group](#) 
- [Doing something with Terrorist Property](#)
- [Provide services for terrorist purposes](#)

Decision History:

What is the case related?	Terrorism
---	-----------

Tip: Click on an attribute link above to return to that decision...

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TERRORISM



ES-Builder Web

ES-Builder
A Expert
V System
C Shell

Based on the responses you have made:
The Penalty is Lifetime Imprisonment +fine

Conclusion Notes:

Expert System Rule:
IF what is the case related? terrorism
AND state the offence member of a terrorist group
THEN the Penalty is Lifetime Imprisonment +fine.

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ES DEVELOPMENT LIFECYCLE

Planning

- Define the project goals/objective and collaborate with a human expert

Analysis

- Finding information and analyse for knowledge base. Confirm with human expert.

Design

- Design the overall system architecture, and structure and the user interface

Development

- Develop the Expert System itself.

Testing

- Test the Expert System to find any bugs or knowledge to be updated

Implementation

- Launch the Expert System for the target users to try out.



Weaknesses

- Limited Scope
- Lack of Contextual Understanding
- Knowledge Maintenance
- Dependency on Input Quality
- Slow Processing Time

SWOT ANALYSIS

Strengths

Strength

- Accuracy
- Accessibility
- Standardisation
- Security and Privacy



- Automation of Legal Process
- Enhanced Legal Decision Support
- Collaboration and Knowledge Sharing

Threats



- Legal and Ethical Concerns
- Resistance to Adoption
- Complexity of Legal System



THANK YOU