Assignment NO1-02

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	Name: - Darsham Sunjay Jadhar
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		CONTROL FROM THE CENTRE FROM THE CONTROL
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	2.1]	Some the following with forward chaining or back-
		word chaining or resolution kerry one) use predicente
		logic as language of knowldage representation dearly
		specify the Pads and inference run used.
a	0-0	Example.
		Every child spes some witch No which has both a
		black cut and a pointed hot.
		Every witch is good or bad
		Every child who sees any good with gets Condy
		Every with that is had has a black cut.
	5)	Every with that is seen by any child has a
		pointed hat.
	6	Prove: Every wild gets condy
	7	A) Facts into for
		1) +xAy(child(x), wirth(y) - 5 = es(x, y))
		NJy (witch 17) -1 hasly, black cut) nhas
-0		(y'. pointed nat)
		2) = = (witch (y) - good (4) vbad (4))
		3) Ex (1sees (x, y) -) (wiren(4) -1 good(41) -)
		get (x, condy)
		4) Ey ((witers (y) -) bad (y)) -) has (y) black hat))
		5) ey (sees (x, y) - has (y) pointed not)
		B) FOL INTO ENF
		7 3 x Ay (child (x), witch (y) - secs (x, y))
		- n Jy, (with (y) - has (y, black hart)
		- 1 m fy (witch (4) - 1 has (4, pointed hat)

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	y ty (wirm (4) - good (4))
	Dy Ewiter (y) - 1 had (y))
	3) Bx (13 ees (x,y) -1 wires (4) -1 good(4)) -9 gets [x, undy
	I By [(sees [x,y] -) witch (4) -) good (4)) - (n cendy)
	4) By [bad (4) -) has (4 , black harts)]
	5) Ex Eseen (x, y) -1 has (y, pointed hat)]
	E) = Mxx [seen(x,y) - has (4 0; black hat)]
	and the court of t
0	sees (x, y) when (y) v sees (x, y)
	2god V bud/y 3
	। ज्ञानदापन भारवता
	~ seen (, (good) a sees (x, bad) has (Y, Z)
	\$ Ylgood ubad }
	\$ 2/b/ack cutv'
MERCHANIS PLA	pointed hatiz
	Seen (x, good) vseen (x, bad)
	has(good, pointeed
	hosts get (x, cundy)
-	
	geen (x, good) vhus (gogood,
	pointed hat) V gets
	(x, cundy) Seen (x, good)v
	gets (x, candy)
	gets (x, coundy) gets (x, coundy)

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	24 T. 1-0'-
	3) Frample 2:-
	1) Every shill gets en doll or a train or a tump of
	a coal
	3) No boy gets any doll.
	4) Every child who is bad gets any lump of wal
	5) No child gots a train
	B) Ram gets sump of coul.
	1) move Ran is buch.
	Jux (boy (x) or girl (x) y child (x))
	y by (childry) - gets (y, don) or gets (y, thin)
	or gets (y, wal)
	3) & w (boy (w) - 1 / gets (w, doll)
	4) for all 2 (wild (2) and bad (2)) of gets (2,000)
	by child cy) - lights (y, train)
	s) child (ram) - gets (ram, cool)
	to prove (child rum Jabarderum)
-	
	CNF douses
	i gir(x) or child(x)
	2) ! child (7) or gets (7, doil) or
	get 5 (7, bru'n') or gets (4; coal)
	3) 1 boy (w) or 1 gets (w, doing
	y ! child (2) or ! bod (2) or gets (2, coul)
	5) 1 child (rum) - 1 gets from, coal)
	6) bad crum)

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	TO THE
	Resolution:
	4) : child (2) or 1 bud (2) or get (2, coal)
	6) bad crum)
	7) ! child I rum) or gets (rum, coul)
	substituting 2 by sum
	1) (a) 1 boy (x) or child (x)
	boy (rum)
	8) child fram / by bstituting x by rum)
	7) : child (rum) or gets coum, coal)
	8) child (mm)
	9) yets crum, coul)
	2) ! child (4) corgets 14, doil) or gets (4, 6 ruin) or
	gets (y coal)
	8) child wam?
	10) gets (rum, doil) or gets (rum, train) or gets
	(ran (cogl)
	(substituting y by sum)
	9) gets (xum, coal)
-	10) gets (run, doll) or gers (run, coal) or gets
	(gam, coul)
	11) gets (rum, doil) or gets (rum, coal)
	3) 1 boy (4) or 1 gets (w, doll)
	5) boy bung
	12) 1 get (ram, doil) (646stituting coby rum)
	11) gets (rum, don)
	13) gers (rym, Coal)
	5) Kazger (run, coal)
	(3) gets cours, coal)
	Hence, buy brums is proved.

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	Q-2)	Differentiare between STRIPS and ADL	
		STRIPS language	ADL
		I) only allow positive littules in the states for eg: A	y can support both positive and negative literals.
	1	is Expressed as Threlligents "Bruatiful	is expressed as of Stupid 1-ugly
		of STRIPS Stund for Stunger dand Research Institute	
		5) malers use of closed world	3) Makes use of open world Assumption (i-e) unmention
		150	med literals are unknown
		literals in goals. toir ey. '- Intelligent 1	vaniables in goal. for eg: - Fx At(r)x) p At
		Beautitus	PI and Pz in the example of blocks.
		5) Chouls un conjuctions tor egi-c Inteligent	s) Goals may trinuolar
		Beautitul)	(Intelligent 1 (Beautity) 1 Rich)
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	O Effects are conjugactions	6) conditional Reflects are
		allowed: when P.C
		means e is an effect only
		it p is satisfied
	a nues not support equality	7) Equality Producte (x24)
	8) Does not have support	8) Suppose for types
	for types	for eg! The Variable P! BRSUN.
		The same of the sa
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Qu	You have two neighbors I and m, who have mornised
	to an you at work when they here the alarm I always
	alls when he hears the alarm, but sometimes
	contusted telephone ringing with alarms and calls
	then too. I like s loud with anyic and sometimes
	misses the alarm together circum the evidence of
	who has or has not called we would like to
	estimate the mobability of burylang bruw er Bayesta
	network for this domain with suitable propobility
	mable.
-	P(E)
	P(8) 0.002
	[0.001] (Burglary) (Farthquake)
	B E P(A)
	(Alarm) F T 0.95
	T F 0.94
0	F T 0.29
	F F 0.001
	A P(T) John Mary Culls A P(M)
	T 0.09 Culls A P(M)
	F 0.01
	D The Handress of the materials hallower
	-Burglan and certhquake aftert the probability.
	The papility.

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color m clar m chey do not do not soot conter d ymany 1: phone nix from net as sociated 3) In para in tinite 9 The alarm humidity 1 a deed p Tohn and alarm become yn the cond probability an combin 3) Fach you represent	John and many cull depends only on + receive any burglances directly they rice minor earthquakes and they do not before calling stening to loud music and John contiste ging to sound of alarm cun se read work only implicitly an incertainty
alarm They do not do not soon Conter d Many 1: phone not as sociated 3) In para in tining The alarm humidity t a deed of Tohn and alarm become you cond probability an combin 3) Fach you represent	John and many cull depends only on + Perceit any burglanies directly they rice minor earthquakes and they do not before culling stening to loud music and John contustive sping to sound of alarm cun se read work any implicitly an oncertainty
alarm They do not do not soot Conter d Many 1: phone not as sociated 3) In para in tining The alarm humidity t a deed of Tohn and alarm become you cond probability an combin 3) Face you represent	John and many cull depends only on + Perceit any burglanies directly they rice minor earthquakes and they do not before culling stening to loud music and John contists aging to sound of alarm cun se read work any implicitly an incertainty
conter do not do not do not conter de sociated as sociated as sociated as sociated as sociated as manding to a dead of temporary and temporary	t perceit any burglasies directly they rice minor earthquakes and they do not before calling stening to loud music and John contists ging to sound of alarm can be read work only implicitly an oncertainty
do not not Conter d 2) many 1: phone nix Associated 3) In para in tinite 9 The alarm humidity, a deed p Tohn and alarm become tem porani an combility	stering to loud music and John contusting to sound of alarm can be read work only implicitly an encertainty
do not not Conter d 2) many 1: phone nix Associated 3) In para in tinite 9 The alarm humidity 1 a deed p Tohn and alarm become tem porani an combility	sterning to loud music and John contusting to sound of alarm can be read work any implicitly an encertainty
Conter d 2) many 1: phone not as sociated 3) In para intinite 9 The alarm humidity 1 a dead p Tohn and dlarm become tem poran an comble 3) Fach roe represent	stering to loud music and John contisted ging to sound of alarm can be read work only implicitly an oncertainty
phone my from net associated 3) In para intinite 9 The alarm humidity a dead p Tohn and alarm be tem poran an combin 3) Fach you represent	stening to loud music and John contustive oging to sound of alarm can be read work only implicitly an incertainty
phone met Associated 3) In para intinite 9 The alarm humidity a dead p Tohn and Alarm be tem poran an combinate 3) Fach you represent	work only implicitly an encertainty
dom net as sociated 3) In para in tinite 9 The alarm humidity a dead John and dam be tem poran an combin 3) Fach you represent	work only implicitly an oncertainty
as sociated 3) In para in tining The alarm humidity to a deed of John and alarm be temporan an combinate an combinate 3) Fach row represent	
in finite a in finite a The alarm humidity to a deed of Tohn and alarm be a tem porun an temporun an combinate an combinate 3) Fach you represent	to culling at work.
in tining The alarm humidity of a deed of a	bability actually summanice Patentaly
temporari an combining an combining 3) factor your	ets of circustumes
humidity, a deed p Tohn and Alarm be tem poran ay The Cond probability an combin 3) Fach you represent	might full to go off due to high
a deed of Tohn and alarm be of temporary an condition 3) fact you represent	Power failure, deud battery, ut, wing
John and alarm be tem poran a) The Cond probability an combin 3) Fach you represent	nouse Stack inside the bell exc.
dlarm bed temporan gran cond probability an combin 3) fach voc represent	many might full to all and noor and
temporani gy The Cond probability an combin 3) Fach voc represent	cause they can out to lunch I am Vacation
g) The Cond probability an combin 3) Fach you represent	
probability an combb 3) fact you represent	by dead passing helicupter etc.
3) fach voi	ition probability tables in new gives
s) fach voi represent	for values of random vaniables depende
G) All van	nation of values for the parent nades.
G) All van	u mugt be sum to! because entries
	exhaustin set of cuses for variable
91 2 96	ableg age Boolenan.
	named a tuble for a Booleum variable
specific	parents contain at independently
	mahabilites.

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8) A variable with the parents has only one row representing por prior probabilities at each possible a value of the variable. 9) Every entry in tell Joint probability distribution can be calculated from information in Bayessian metwork. 10) A generic entry in Joint distribution is probability at a enjuction of particular assignments to each variable $P(X_1 \subseteq X_1 \cap \dots \cap X_n \supseteq X_n)$ abbreviated as $P(X_1 \dots \cap X_n) \circ \dots \circ X_n \supseteq X_n$ 11) The value of this entry is $P(X_1 \dots \cap X_n) \circ \dots \circ X_n$ 12) The value of this entry is $P(X_1 \dots \cap X_n) \circ \dots \circ X_n$ 13) The value of this entry is $P(X_1 \dots \cap X_n) \circ \dots \circ X_n$ 14) The value of this entry is $P(X_1 \dots \cap X_n) \circ \dots \circ X_n$ 15) The value of this entry is $P(X_1 \dots \cap X_n) \circ \dots \circ X_n$ 16) The value of this entry is $P(X_1 \dots \cap X_n) \circ \dots \circ X_n$ 17) The value of this entry is $P(X_1 \dots \cap X_n) \circ \dots \circ X_n$ 18) The value of this entry is $P(X_1 \dots \cap X_n) \circ \dots \circ X_n$
=> (ja) P(m/a) P(a(n6nne) P(nb)e(nd) => 0.09 x 0.04 x 0.001 x 0.999 x 0.998 => 0.00628 P) Bayesian Network
Calls Conthauake Samm