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Fitte: Homework 2 on Search for Solutions

of Al should be to build general heuristics applicable to any graph - Searching algorithm.

Ans: The quote states that the (seation of generic heurisitics should be the main goal of Al research

Graph - Searching Peoblems: These are wask data

Structures that are used to show relationship between

eloments. Finding pathways, patterns, or Solutions

eloments. Finding pathways, patterns, or graph - Search

inside these structures is the goal of graph-Searching issues. Examples include route planning, social network analysis, and game-playing algorithms.

Building General Heuristics: Developing general Heuristics
refers to the techniques that may be used to solve
a variety of graph - Searching issues. In contrast,
creating cutom solutions for each unique issue can be
time consuming and Unworkable

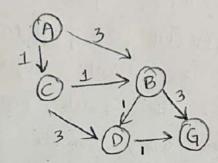
hets de some Analysis in this quote now!

Efficiency and Scalability: Developing Universial heuristics can considerably improve the efficiency and scalability of Al Systems. Al Can use current heuristics to Swiftly adapt to new tasks rather than having to remount the wheel tow every issue.

In Conclusion, the quote emphasizes the importance of surviving for queval heuristics in AI, particularly surviving for queval heuristics in AI, particularly surviving for the context of graph Searching Problems. Although in the context of generality may be difficult, finding obtaining Perfect generality may be difficult, finding obtaining and effective AI Solutions continues to be a theorible and effective AI Solutions continues to be a theorible in developing the science of key objective in developing the science of

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Consider the above Graph, where the problem is to find a path from Start A to goal G.

An Each pronties element in the A graph search phone will be connected to a target state for phone will be connected to a target state for thinte group without cycles. This is because of timite group without cycles. This is because of thinte group without cycles. This is because of thinte group of Algorithms are good at navigating Path - tinding algorithms are good at navigating barriers and locating lim best options for Daviers and locating lim best options for these techniques are decided to make broad the graph containing cycles. These techniques are decided to make broad ludgements about the next step without taking into Account all Potential Consequences from any one stage. In Order to discovers the best answer, a local Search may select from a range of local options. Any boundary can be located

infinity of all possible Because we approach asymptotic Q.3) states and Connections between states, for an infinite graph with a finite branching coefficient, each element on design the boundary will be connected to a goal State. in other words, If you start at any point in an of ' infinite graph and follow every possible branch, and will never van out of Options. For finite getworks, without cycles, infinite graphy with cycles, and infinite graphs with finite brancing factors, the At approach is quaranteed to find the Proper State. As a result before arriving at a final objective, the search procedure may fail to notice that there are numerous Variable paths to a single goal, torcing the Search procedure to restart from the beginning with a different poot. tinding method that recognize mutiple goals better-

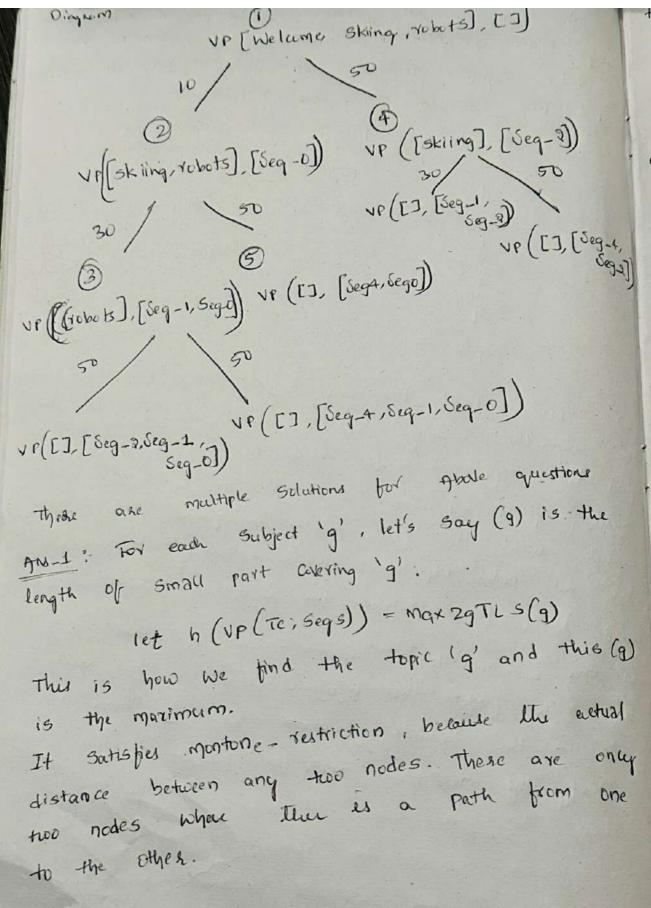
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1	1. Gearding to
	(2.3) This questions investigates using graph Bearding to database there exists a database there exists a database design video presentations. Suppose their length in second billows
	this question invertigates there exists a design video presentations. Suppose there exists a length in second of video Segments together with their length in second of video Segments together with tollows and topics covered setup as tollows and topics covered setup as tollows [Welcome]
	design video presentations length their length
7	
	and length
	Seq 0 [Sking, Views]
	SMI
	Seg 1 [Welkome, Artificial - interfere,
	Seg 2 [araphics, dragons]
	40 43
	Seq 3 [sking, robots]
	Sea 4
	to loves the topics and
	unat the goal is postmost topics to
	Suppose that the goal is to leftmost topics to and the always select the leftmost topics to always select the leftmost topics to
1	a) Suppose that the goal is to leptmost topics to the algorithm always select the leptmost topics to the algorithm always select the leptmost topics to the algorithm always select the leptmost topics to find the neighbours for each node. Draw the first for each node. This should search space expanded for a lowest - lost - first should search until the first solution is found.
	the neighbours lowest - lost
4	find The Showa
100	Search space expanded, which note is a goal node,
	with the fine pode
9	geath adopted , build

a) suppose that the goal between topics to the algorithm always select the leptmost topics to the algorithm always select the leptmost topics to the algorithm always select the leptmost topics to that the neigh bound for each node. Draw the rest of this should search with the first solution is found. This should search with node is a goal node, when all nodes expanded, which node is a goal node, when the goal was found the prontier when the goal was found.

Show all nodes expanded, which here goal was found the prontier when the goal was found the prontier when the goal was found.

Show a non-trivial heuristic function. Does it notion is the trivial heuristic function. Does it no is the prontier restriction for a heuristic function setisfy the monotone restriction for a heuristic function.



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Anxour 3

For each Segment, let the Segment's Contribution

be the Segment's time divided the number of topics

the Segment General divided the number of topics

the Segment General the Set S(9) be the Smallest

There each topic 9, let the Set S(9) be the Smallest

contribution for all Segments that Covers the topic

contribution for all segments the Segment details are

function Satisfies the monotone require one pass through the Segment database

Schuttons require one pass through the Segment database

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to build.