ML Assignment

Name: Zuhair Raza

Roll No: FA20-BCS-085

Q1 Dataset-

	Origin	Manufactur	Colur	Decade	Type	Target
2	Japan	Honda	Blue	1980	Geo	+
2	Japan	Toyota	Green	1970	Sports	-
Japan		Toyota	Blue	1990	Eco	+
2	USA	Chrylor	Red	1980	Eco	-
2	Japan	Honda	white	1980	Eco	+

Use Candidate-Elimination Algo

$S_0 \{\emptyset, \emptyset, \emptyset, \emptyset, \emptyset\}$

$S_2 S_1 \{Japan, Honda, Blue, 1980, Geo\}$

$S_4 S_3 \{Japan, ?, Blue, 1980/1990, Eco\}$

$S_5 \{Japan, ?, Blue/white, 1980/1990, Geo\}$

$G_5 \{Japan, ?, ?, ?, ?\} \{?, Honda, ?, ?, ?\} \{?, ?, white, ?, ?\}$

$G_4 \{?, ?, ?, 1970, ?\} \{?, ?, ?, 1990, ?\} \{?, ?, ?, ?, Sports\} \{?, ?, white, ?, ?\}$

$\{Japan, ?, ?, ?, ?\} \{?, Honda, ?, ?, ?\} \{?, Toyota, ?, ?, ?\} \{?, ?, Blue, ?, ?\} \{?, ?, Gr...$

$G_3 \{?, ?, Blue, ?, ?\} \{?, ?, ?, 1990, ?\} \{?, ?, ?, ?, Eco\}$

$G_2 \{?, ?, ?, 1980, ?\} \{?, ?, ?, 1990, ?\} \{?, ?, ?, ?, Eco\}$

$\{USA, ?, ?, ?, ?\} \{?, Honda, ?, ?, ?\} \{?, Chrylor, ?, ?, ?\} \{?, ?, Red, ?, ?\} \{?, ?, Blue, ?, ?\}$

$G_1 G_0 \{?, ?, ?, ?, ?\}$

Q2 S-Algo

Train Set

$x_1 = \langle$ Healthy, Good Sleep, Compliment, Good Food, Stress-Free $\rangle$ +

$x_2 = \langle$ Healthy, Good Sleep, No Compliment, Bad Food, Stress $\rangle$ −

$x_3 = \langle$ Unhealthy, Poor Sleep, Compliment, Good Food, Stress-Free $\rangle$ +

$x_4 = \langle$ Unhealthy, Poor Sleep, No Compliment, Bad Food, Stress $\rangle$ −

$x_5 = \langle$ Healthy, Good Sleep, Compliment, Bad Food, Stress $\rangle$ +

Finding S-Algo

$h_0 = \langle \emptyset, \emptyset, \emptyset, \emptyset, \emptyset \rangle$

$h_1 = \langle H, GS, C, GF, SF \rangle$

$h_3 = \langle ?, ?, C, GF, SF \rangle$

$h_5 = \langle ?, ?, C, ?, ? \rangle$

h_2 and h_4 will be skipped ar they are negative ~~target~~ target