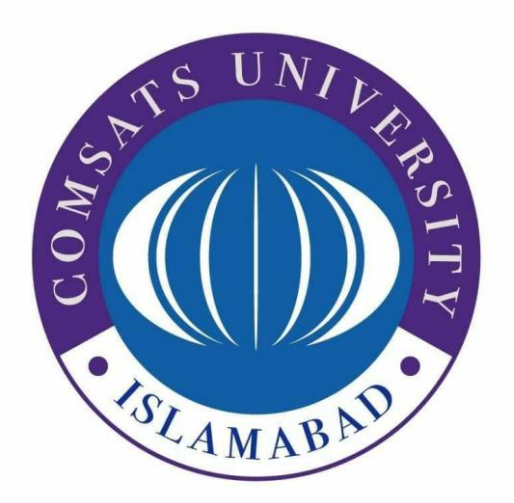
Machine Learning

Assignment No. 1



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QNo1

Q Candidate elimination method

$S_0 = \langle \emptyset \ \emptyset \ \emptyset \ \emptyset \ \emptyset \rangle$

$S_1 = \langle$ Japan, Honda, Blue, 1980, Economy$\rangle$

$S_2 = \langle$ Japan, Honda, Blue, 1980, Economy$\rangle$

$S_3 = \langle$ Japan, ?, Blue, ?, Economy$\rangle$

$S_4 = \langle$ Japan, ?, Blue, ?, Economy$\rangle$

$S_5 = \langle$ Japan ?, ?, ? Economy$\rangle$

$G_5 = \langle$ Japan, ?, ?, ?, Economy$\rangle$

$G_4 = \{\langle ??$ blue ??$\rangle, \langle ??$ 1990 ?$\rangle, \langle$ Japan ? ? ? Economy$\rangle$

$G_3 = \{\langle ??$ blue ??$\rangle, \langle ??$ 1990 ?$\rangle \langle ???$ economy$\rangle\} \{\langle ??$ red ??$\rangle, \langle ?$ white ??? $\langle ???$ 1980 ?$\rangle \langle ????$ Economy?

$G_2 = \langle$USA, ????$\rangle \langle$? Honda ????, $\langle$? cherly ???$\rangle$ $\langle ??$ blue ??$\rangle\}$

$G_1 = \{?, ?, ?, ?, ?\}$

$G_0 = \langle ?, ?, ?, ?, ? \rangle$

QNO2

Find (S) Algorithm

Data in vector form

Face	Hair	Eye	Nose		Output
Circle	Yes	Circle	Triangle	Pink	Happy
Square	Yes	Square	Square	Green	Sad
Circle	Yes	Square	Triangle	Yellow	Happy
Circle	No	Circle	Triangle	Green	Sad
Circle	Yes	Square	Square	Yellow	Happy

let

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

$h_1 = \langle$ Circle, Yes, Circle, Triangle, Pink $\rangle$

$h_2 = \langle$ Circle, Yes, ?, Triangle, ? $\rangle$

$h_3 = \langle$ Circle, Yes, ?, ?, ? $\rangle$

So h_3 is the most specific hypothesis.