**Assignment 01**

**MACHINE LEARNING**

**Ali** Asghar **(**FA21-BSE-**083)**

Submitted to: Muhammad **Sharjeel**

**QUESTION: 01**

Initialize G0 and S0

S0= <Ø,Ø,Ø,Ø,Ø>

G0= <?,?,?,?,?>

Consider first training instance

X1= <Japan, Honda, Blue, 1980, Economy> +ve

S1= <Japan, Honda, Blue, 1980, Economy>

G1= <?,?,?,?,?>

Consider second training instance

X2= <Japan, Toyota, Green, 1970, Sports> -ve

S2= <Japan, Honda, Blue, 1980, Economy>

G2= <?,Honda,?,?,?> <?,?,Blue,?,?> <?,?,?,1980,?> <?,?,?,?,Economy>

Consider third training instance

X3= <Japan, Toyota, Blue, 1990, Economy> +ve

S3= <Japan, ?, Blue, ?, Economy>

G3= <?,?,Blue,?,?> <?,?,?,?,Economy>

Consider fourth training instance

X4= <USA, Chrysler, Red, 1980, Economy> -ve

S4= <Japan, ?, Blue, ?, Economy>

G4= <?,?,Blue,?,?> <Japan,?,?,?,Economy>

Consider fifth training instance

X5= <Japan, Honda, White, 1980, Economy> +ve

S5= <Japan,?,?,?, Economy>

G5= <Japan,?,?,?,Economy>

**QUESTION: 02**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **EYES** | **NOSE** | **HEAD** | **FACE COLOR** | **HAIR** | **EXPRESSION** |
| round | triangle | round | purple | yes | yes (+ve) |
| square | square | square | green | yes | no (-ve) |
| square | triangle | round | yellow | yes | yes (+ve) |
| square | triangle | round | green | no | no (-ve) |
| square | square | round | yellow | yes | yes (+ve) |

HO: (0, 0, 0, 0, 0)

Ex1: (Round, Triangle, Round, Purple, Yes) - POS

H1: (Round, Triangle, Round, Purple, Yes)

Ex2: (Square, Square, Square, Green, Yes) - NEG - IGNORE

H2: (Round, Triangle, Round, Purple, Yes)

Ex3: (Square, Triangle, Round, Yellow, Yes) - POS

H3: (?, Triangle, Round, ?, Yes)

Ex4: (Round, Triangle, Round, Green, No) - NEG - IGNORE

H4: (?, Triangle, Round, ?, Yes)

Ex5: (Square, Square, Round, Yellow, Yes) - POS

H5: (?,?, Round, ?, Yes)