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Class / Branch: TE/CSE-DS
Subject: Artificial Intelligence Lab
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Experiment No.08

Aim:- To implement backward chaining algorithm using python.

Program:

1. Write a program using backward chain Algorithm for the given case study.

   Given data is the Goal State = frog or canary. Apply inference rules and reach the initial state.

Code:

```
database=["Croaks","Eat Flies","Shrimps","Sings"]
knowbase=["Frog","Canary"]
color=["Green","Yellow"]

def display():
print("\n X is \n1.Frog \n2.Canary ",end='')
print("\n Select One ",end='')
def main():
print("*----- Backward Chaining -----*", end='')
display()
x=int(input())
print(" \n",end='')
if x==1:
print("Chance Of Eating Flies ",end='')
elif x==2:
print("Chance Of Shrimping ",end='')
else:
print("\n---- Invalid Option Selected -----",end='')
if x>=1 and x<=2:
print("\n X is ",end='')
```

```
print(knowbase[x-1],end='')
print("\n1.Green \n2.Yellow")
k=int(input())
if k==1 and x==1:
print(" Yes it is in ",end='')
print(color[0],end='')
print(" color and will ",end='')
print(database[0])
elif k==2 and x==2:
print(" Yes it is in ",end='')
print(color[1],end='')
print(" color and will ",end='')
print(database[2])
else:
print("\n----- Invalid Knowledge Database ",end='')
if __name__=="__main__":
main()
```

Output:

```
*----- Backward Chaining -----*
 X is
1.Frog
2.Canary
 Select One 1

Chance Of Eating Flies
 X is Frog
1.Green
2.Yellow
1
 Yes it is in Green color and will Croaks
```