```
graph={
   'S':['A','B'],
   'A':['C','D'],
   'B':['I','J'],
   'C':['E','F'],
   'D':['G'],
   'I':['H'],
   'J':[]
}
def dls(start,goal,path,level,maxLimit):
   print('\nCurrent level -->',level)
   print('Goal node testing',start)
   path.append(start)
   if start==goal:
      print('Test successfull goal found')
      return path
   print('Goal node test failed')
   if level==maxLimit:
      return False
   print('Expanding current node:',start)
   for child in graph[start]:
      if dls(child, goal, path, level+1, maxLimit):
         return path
   return False

start='S'
goal=input('Enter goal:')
maxLimit=int(input("Enter max limit:"))
print()
path=list()
res=dls(start, goal, path, 0, maxLimit)
```

```
if(res):
    print('Path exists')
    print('Path',path)
else:
    print('Path doesnt exist')
```