REPORT FOR BOAT SAVES PRINCES

As a project work for course

PYTHON PROGRAMMING (INT 213)

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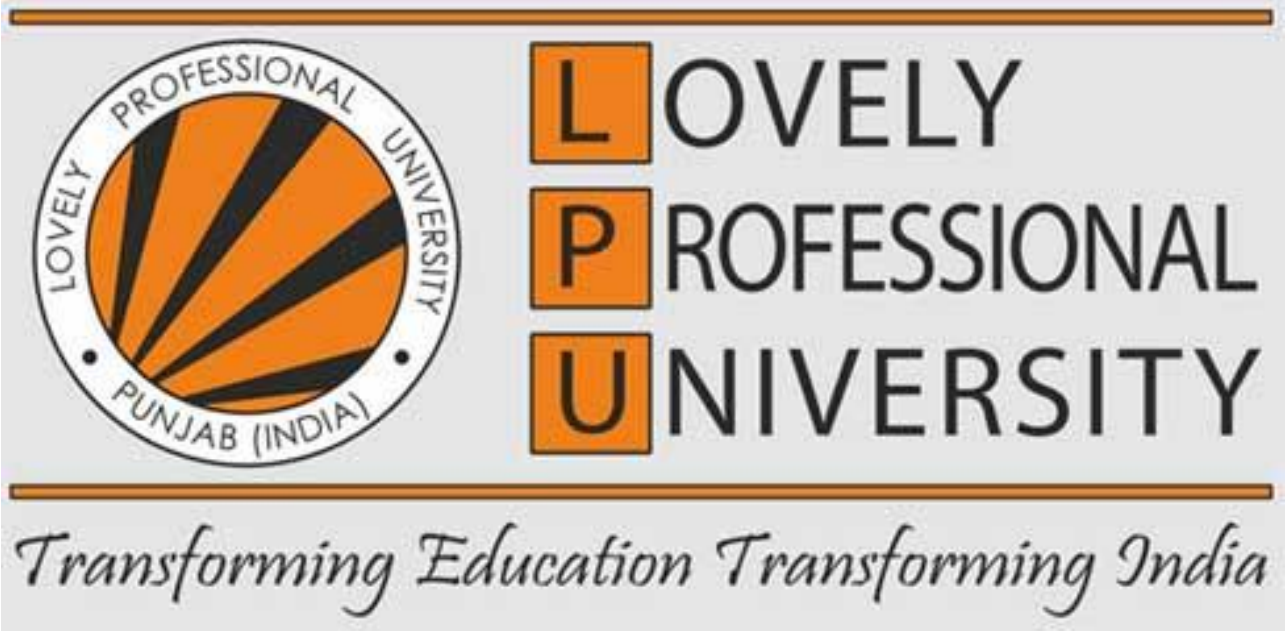

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BOAT SAVES PRINCES

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ABSTRACT:- Princess Peach is trapped in one of the four corners of a square grid. You are in the center of the grid and can move one step at a time in any of the four directions. Can you rescue the princess?

ACKNOWLEDGEMENT:-

I would like to thank my mentor – prof.Sagar pande for his advice and inputs on this project. Many thank to my friends

And seniors as well , who spent countless hours to listen and provide feedbacks.

TABLE OF CONTENTS

1.ABSTRACT

2.INTRODUCTION

- 2.1 CONTENT
- 2.2 MOTIVATION
- 2.3 IDEA

3.LIBRARIES

- 3.1 DIFFERENT TYPES
- 3.2 WHY THEY ARE USED

INTRODUCTION:-

1.1 Context

This project has been donev as part of my coursefor the cse(h) at Lovely Professional university . supervised by sagar pande, I have three months to fulfill the requirement in order to succeed the module.

1.2 Motivations

Being extremely interested in everything having a relation with the Machine Learning, the group project was a great occasion to give us the time to learn and confirm our interest for this field. The fact that we can make estimations, predictions and give the ability for machines to learn by themselves is both powerful and limitless in term of application possibilities. We can use Machine Learning in Finance, Medicine, almost everywhere. That's why I decided to conduct my project around the Machine Learning.

1.3 Idea

As a first experience, we wanted to make my project as much didactic as possible by approaching every different steps of the machine learning process and trying to understand them deeply. Known as " toy problem" the problems that are not immediate scientific interest but useful to illustrate and practice, we chose to take house price Prediction as approach. The goal was to predict the price of a given house according to the market prices taking into account different "features" that will be developed in the following .

LIBRARIES

Numpy:-

Numpy is a general purpose array-processing package.it provides a high performance multidimensional array objects,and tools for working with this array . it is the fundamental package for scientic computing with python.

As the whole project is based on whole complex stats,we will use this fast calculations and provide results.

Pandas:-

Pandas is the most popular python librarary that is used for data analysis. we wil provide highy optimized

Performance with back-end source code with the use of pandas

Matplotlip:-

Matplotlib tries to make easy things easy and hard things possible. We will generate plots, histograms, scattersplots,etc.,to make our project more appealing and easier to understand.

Seaborn:-

We will use it forstatical data visualization as dseaborn is python darta visualization library based on matplotlib. I9it provides a high level interface for data drawing attractive and informative statistical graphics.

Scikit-learn:-

It is python library is associated with Numpy and Scipy. It is considered as one of the best libraries for working with complex data.

There are a lot of changes being made in this library. We will use it for cross validation feature, providing the ability to use more then one metric. Lots of training methods like logistics regression will be used to provide some little improvements.

#code

```
def displayPathtoPrincess(n,grid):
    pXPos = None
    pYPos = None
    for i in range(0, n):
        for j in range(0,n):
            if grid[i][j] == "p":
                pYPos = i
                pXPos = j
    movesX = pXPos - (n-1)//2
    movesY = pYPos - (n-1)//2
    if(movesX < 0):
        for i in range(0, abs(movesX)):
            print("LEFT")
    else:
        for i in range(0, movesX):
            print("RIGHT")
    if(movesY < 0):
        for i in range(0, abs(movesY)):
            print("UP")
    else:
        for i in range(0, movesY):
            print("DOWN")

n = int(input())
```

```
grid = []

for i in range(0, n):

   grid.append(input().strip())



displayPathtoPrincess(n,grid)
```

Bot Saves Princess

Princess Peach is trapped in one of the four corners of a square grid. You are in the center of the grid and can move one step at a time in any of the four directions. Can you rescue the princess?

Input format

The first line contains an odd integer N (< 100) denoting the size of the grid. This is followed by an NxN grid. Each cell is denoted by '-' (ascii value: 45). The bot position is denoted by 'm' and the princess position is denoted by 'p'.

The top left of the grid is indexed at (0,0) and the bottom right is indexed at (N-1,N-1)

Output format

Print out all the moves you take to rescue the princess in one go. Moves must be separated by '\n' a newline. The valid outputs are LEFT or RIGHT or UP or DOWN.

Sample input

```
3

---

-m-

p--
```

Sample output

```
DOWN

LEFT
```

Task

Complete the function displayPathtoPrincess which takes in two parameters - the integer N and the character array grid. The grid will be formatted exactly as you see it in the input, so for the sample input the princess is at grid `[2][0]`. The function shall output moves (LEFT, RIGHT, UP or DOWN) on consecutive lines to rescue/reach the princess. The goal is to reach the princess in as few moves as possible.
The above sample input is just to help you understand the format. The princess ('p') can be in any one of the four corners

Scoring Your score is calculated as follows : (NxN - moves made to rescue the princess)/10, where N is the size of the grid (3x3 in the sample testcase).