INTELLIGENCE SYSTEM DEVELOPMENT
PTIT – D20CNTT, Semester I, 2023
quetd@ptit.edu.vn, tdque@yahoo.com

Thinking: *Studying is to a process of discovering yourself, knowledge, skills, behaviors/attitudes you need to obtain for your jobs, your life, your health, your happiness.*

Due Date: 28/08/2023

BÀI TẬP 1

1.1 Hãy khảo sát và thưởng ngoạn. Viết gì bạn thích (>2 trang):
https://www.forbes.com/sites/robertadams/2017/01/10/10-powerful-examples-of-artificial-intelligence-in-use-today/?sh=2ed5b87e420d
https://www.apple.com/siri/
https://www.simplilearn.com/tutorials/artificial-intelligence-tutorial/artificial-intelligence-applications
https://www.som.iitb.ac.in/wp-content/uploads/2016/07/5.-CSIC_Intelligent-Systems-and-Applications-in-IT-Management.pdf
https://arxiv.org/pdf/2009.09083.pdf

1.2. What is Intelligent system? Trong 15 định nghĩa sau, định nghĩa nào tạo ấn tượng mạnh với bạn? Các ví dụ của hệ thống thông minh (>2 trang)
https://www.igi-global.com/dictionary/intelligent-system/15045
https://high-tech-guide.com/article/what-are-examples-of-intelligent-systems
https://www.iotforall.com/8-helpful-everyday-examples-of-artificial-intelligence
https://www.algotive.ai/blog/intelligent-systems-what-are-they-how-do-they-work-and-why-are-they-so-important
https://www.youtube.com/watch?v=2dKqlwGhAN0
https://www.youtube.com/watch?v=aep1v2pZ44Y

1.3. Hãy mô tả ngắn gọn các ứng dụng của hệ thống thông minh: Lĩnh vực sử dụng, các kỹ thuật trong AI mà nó sử dụng (>2 trang)
https://builtin.com/artificial-intelligence/examples-ai-in-industry
https://www.unr.edu/cse/undergraduates/prospective-students/what-are-intelligent-systems

1.4. Các kiểu hệ thống thông minh (>2 trang)
https://www.simplilearn.com/tutorials/artificial-intelligence-tutorial/types-of-artificial-intelligence
https://www.edureka.co/blog/types-of-artificial-intelligence/

1.5. Load và đọc bài báo https://arxiv.org/pdf/2009.09083.pdf Trình bày các ứng dụng của Hệ thống thông minh qua Figure 7 trong bài báo (>2 trang).

1.6. Trình bày các đặc trưng, mục đích của các thư viện numpy, pandas, matplotlib, scikitLearn. Cho các ví dụ minh họa (>3trang).

1.7. (pg 29, [1]) Suppose you have three arrays: one containing the names of a group of people, another the corresponding heights of these individuals, and the last one the corresponding weights of the individuals in the group:

```
names = np.array(['Ann','Joe','Mark'])
```

```
heights = np.array([1.5, 1.78, 1.6])
weights = np.array([65, 46, 59])
```

you want to calculate the Body Mass Index (BMI) of this group of people. The formula to calculate BMI is as follows:

- Divide the weight in kilograms (kg) by the height in meters (m)
- Divide the answer by the height again

Using the BMI, you can classify a person as healthy, overweight, or underweight using the following categories:

- Underweight if BMI < 18.5
- Overweight if BMI > 25
- Normal weight if 18.5 <= BMI <= 25

1.8. Performing the following

- Plotting Multiple Lines in the Same Chart ([2], page 71)
- Adding a Legend ([2], page 72)
- Plotting Bar Charts ([2], page 73)

Then collect data from your team: student_name, subject (5 subjects), mark. Display the results in three above forms

1.9. Your task is to plot a chart to show the proportion of men and women in each group that has a driver's license, you can use Seaborn's categorical plot ([2], page 86). Store data in file CSV and display.

1.10. Using the Titanic dataset, plot a chart and see what the survival rate of men, women, and children looks like in each of the three classes https://github.com/mwaskom/seaborn-data ([2], page)

1.11. Construct data salary.csv for

gender, salary
men,100000
men,120000…….

Your task is to show the distribution of salaries for men and women ([2], 90)

1.12. Cho dữ liệu: (diện tích/m2, giá nhà/tỷ) như sau:

(50, 2.5), (60, 3), (65, 3.5), (70, 3.8), (75, 4), (80, 4.5), (85, 5)

Hãy chạy chương trình với regression để đưa ra dự đoán giá nhà cho 55m2, 68m2, 76m2, 90m2

1.13. Cho data về chiều cao, trọng lượng của người ([2] page 101). Sử dụng regression để dự đoán trọng lượng khi cho chiều cao.

1.14. Using multiple linear regression to predict house prices based on multiple features. Your task is to use Boston Dataset to implement the program ([2], page 120--…..)