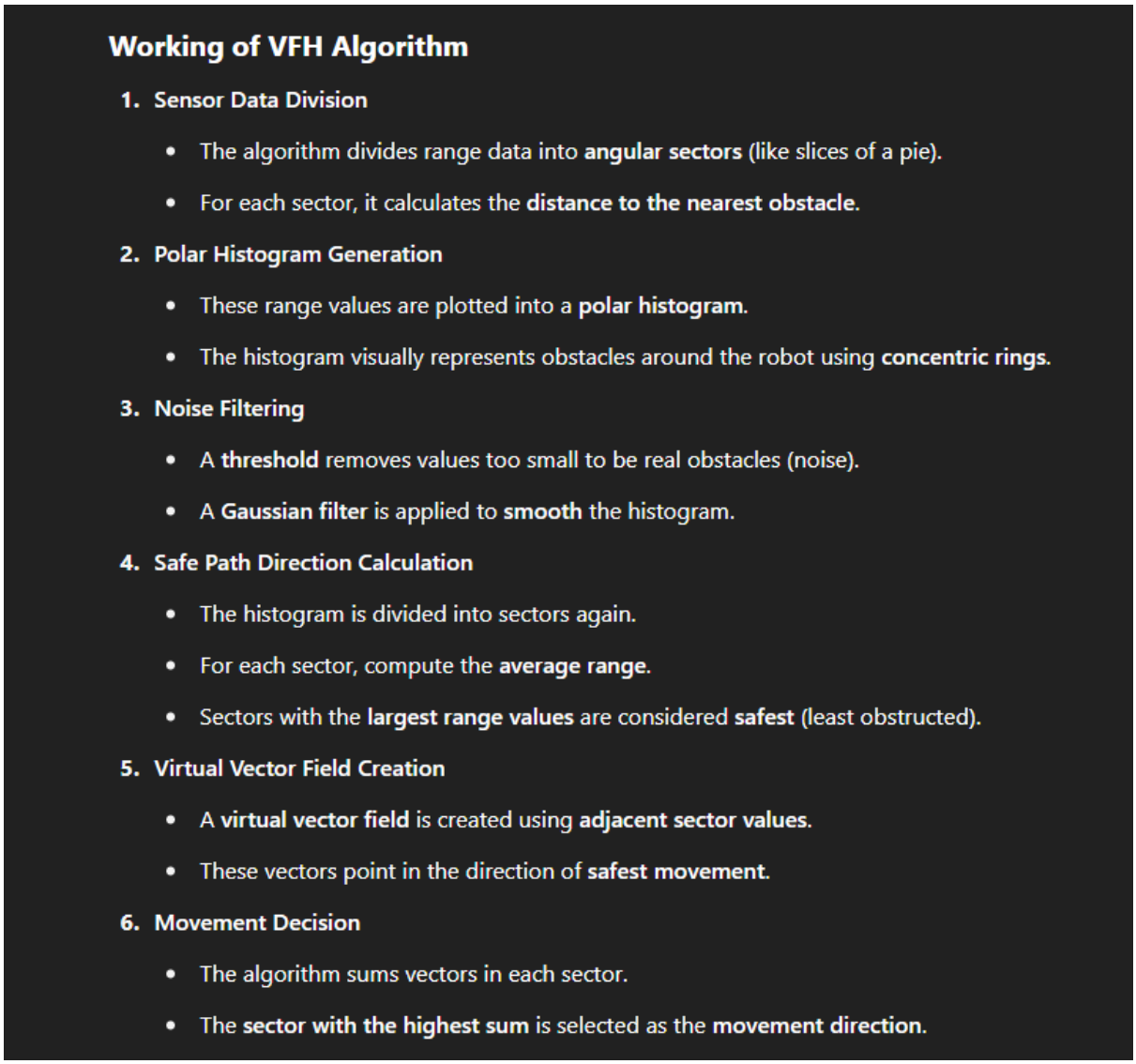
Merin Philip

Testing of Text Extraction



Hlooooo.....

Haiiiiiiiiiiii.....

Byeiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii.....

(Pages – 1) Class No : .....
Name: .....

ST. ALBERT'S COLLEGE (AUTONOMOUS), ERNAKULAM

B.Voc.SOFTWARE DEVELOPMENT

Second Internal Examination SEPT 2024

SEMESTER V

Course Code: VCS5CRT0220

Course Title:Programming in Java and Lab

Time : 1 hour Maximum Marks : 25

PART A

*Answer any **two** questions. Each question carries 1 mark*

1. What is an Exception?
2. What is Thread?
3. What is 'finally'?

(2 x 1 = 2)

PART B

*Answer any **two** questions. Each question carries 2 marks*

4. What are the different types of exceptions?
5. Differentiate 'throw' and 'throws'.
6. What are the different stages of a thread?

(2 x 2 = 4)

PART C

*Answer any **one** question. Each question carries 4 marks*

7. Explain try – catch in Java with example.
8. Write a Java program to handle division by zero exception.

(1 x 4 = 4)

PART D

*Answer any **one** question. Each question carries 15 marks*

9. Java program to demonstrate method overriding with the following data. Create a base class "Vehicle" and declare the variable reg_no as string and model as integer. Create a function read() inside the class to read data for the variables. Create a derived class "TwoWheeler" and declare the variables no_gear and power as integer. Create another as string. Create a derived class "Scooter" and declare variables manufacturer, owner function read() to get the data for no_gear, power, manufacturer and owner. Create another function print that prints the values of all the variables.
10. Explain different ways for creating threads with example.

(1 x 15 = 15)

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Question paper demo

Another demo

1) Describe any four attractive features of the biological neural network that make it superior to the most sophisticated Artificial Intelligence computer system for pattern recognition tasks.

1. Massive Parallelism

- The brain processes information in **parallel** using billions of neurons and trillions of synapses.
- This allows for simultaneous analysis of large volumes of data, which is critical in recognizing patterns like faces, speech, and handwriting.
- **AI Limitation:** Most AI systems, even with GPUs, still simulate parallelism and have hardware and speed limits.

2. Robustness and Fault Tolerance

- Biological neural networks are **highly tolerant to noise, damage, and incomplete data**.
- The brain can still function even if some neurons are damaged or missing.
- In pattern recognition, the brain can often **recognize patterns even with partial or noisy input**.
- **AI Limitation:** AI systems often fail or perform poorly with noisy or incomplete data unless specially trained for it.

3. Learning from Few Examples (One-shot or Few-shot Learning)

- The human brain can **learn and generalize** from very few examples — sometimes even from just one exposure.

Error Sources in Odometric Data

Even though odometry is simple and fast, it is **not perfectly accurate**. Various types of errors can accumulate over time:

1. **Wheel Slippage**
   - If a wheel slips (especially on smooth, wet, or uneven surfaces), the rotation does not correspond to actual movement.
   - Causes wrong estimation of distance or direction.
2. **Uneven Surface or Rough Terrain**
   - If the ground is not flat, wheels may bounce or tilt, leading to wrong measurements.
   - The robot might move in ways that are not detected properly by wheel sensors.
3. **Imperfect Wheel Calibration**
   - If the wheels are not exactly the same size or the encoders are slightly inaccurate, the robot's estimation of distance and rotation will be wrong.
   - Small calibration errors accumulate into large position errors over time.
4. **Mechanical Wear and Tear**
   - Over time, wheels, gears, and sensors can wear out or get loose.
   - This results in inaccurate readings of rotations and distances.