



# **SNAKE GAME & MACHINE LEARNING**

**Group : BADRA Julien**

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## Project Topic & Motivation

Implementation of a Snake game and an AI that can play Snake

### Motivation:

- Understanding game development principles
- Practical application of reinforcement learning
- Real-world implementation of AI concepts



# Required Knowledge & Skills



Python programming (pygame, numpy)

Reinforcement learning / Q-Learning concepts



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Game developpement basics with Pygame

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Reinforcement learning / Q-Learning concepts

Game developpement basics with Pygame

# Schedule & Timeline

Week 1 & 2 : vacations

Week 3 : Jan 6

Week 4 : Jan 13

Week 5 : Jan 20

## **Week 1-2: Game Development**

Basic Snake game implementation

## **Week 3-4: AI Implementation**

Q-learning algorithm integration

## **Week 5: Logger & Optimization**

Adding log system and bug fixes

# Team Organisation

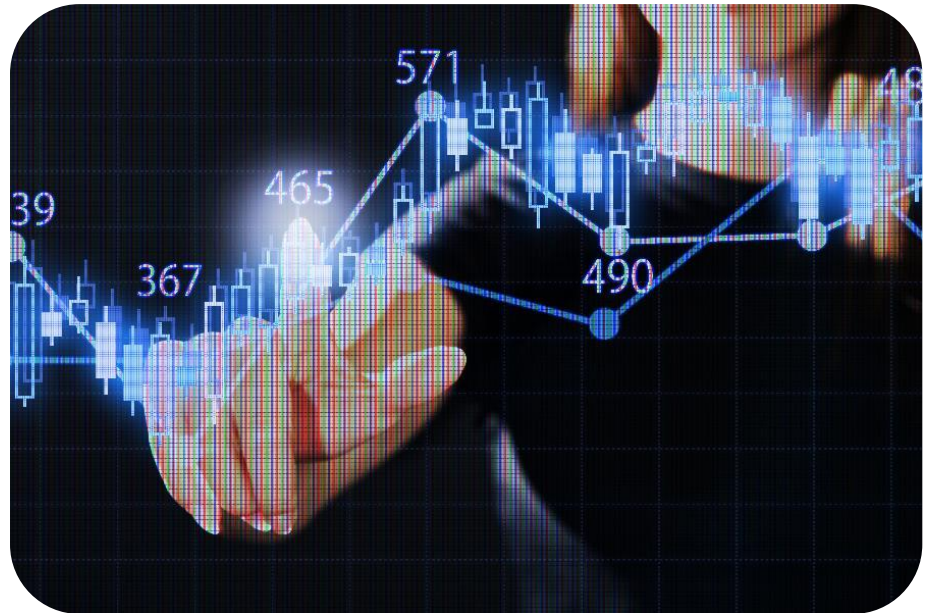
**Team Leader:** BADRA Julien  
**Game Developer:** BADRA Julien  
**AI Developer:** BADRA Julien  
**Testing Lead:** BADRA Julien

# Project Risks

AI performance

Learning curve for Q-learning

Integration issues  
between components





# Delivrables



Game.py

AI.py

Snake\_log.py

# THE END

Any questions ?

