

AI Coding (10-14 y/o)

AI003+ Python Application and PyGame

Python PyGame course introduces computational thinking skills behind software application design and PyGame. The project-based approach employs a pedagogical sequence: project demo -> requirements analysis -> problem presentation -> solution proposal and implementation -> reinforcement of syntax and coding concepts. The basics of a popular Python library (pygame) bridges the concepts common in computer game development while further developing the students' software development skills.

Contents

PyGame Level #1

- Unit #1 - Introduce Pygame library
Initialize_Pygame
- Unit #2 - Drawings, Images, Animations and Controls
Draw Shapes / Load Images, Key Controls, Animation, Sprite sheet
- Unit #3 - Programming Object Collisions
Bouncing Ball - Object Collisions, Basic Pong
- Unit #4 - Sounds, Music, Custom Text
Mixer Control, Sound Effects, Custom Text
- Unit #5 - Game Development

PyGame Level #2

- Unit #1 - PyGame level#1 Review
'Organize' calculator program
- Unit #2 - Writing Cleaner Code For Bigger Projects
Bouncing ball advanced, Gravity/Jumping, Circle Collisions
- Unit #3 - Advanced Graphics / Physics
Pygame simple shader, Rain, Snow, Clouds / Fog, Fire
- Unit #4 - Smarter AI
Pong AI, Tic-Tac-Toe AI, Spelling Bot
- Unit #5 - Game Development: Creative Freedom

Syllabus: <https://school.thinkland.ai/syllabus/>

Curriculum: <https://school.thinkland.ai/curriculum>

Teachers: <https://school.thinkland.ai/teacher>



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