

The screenshot shows the Microsoft Visual Studio Code (VS Code) interface. The top bar includes File, Edit, Selection, View, Go, Run, Terminal, Help, and a search bar for 'lab.py'. The left sidebar has sections for EXPLORER, PROBLEMS, OUTLINE, and TIMELINE. The EXPLORER section shows a folder named 'LAB.PY' containing a file 'cartpole.py'. The PROBLEMS section indicates 'No problems have been detected in the workspace.' The bottom status bar shows 'In 49, Col 1' and other system information.

File Edit Selection View Go Run Terminal Help < > lab.py

EXPLORER

LAB.PY

cartpole.py

OUTPUT DEBUG CONSOLE TERMINAL PORTS

TERMINAL

Python Debug Console

PROBLEMS

No problems have been detected in the workspace.

OUTLINE

TIMELINE

Maximum Score Achieved: 62.0  
PS C:\Users\zumer\OneDrive\Desktop\lab\_working\lab\_11\lab.py>

In 49, Col 1 Spaces: 4 UTF-8 CRLF Python 3.13.2 Go Live

Search

44°F Clear

12:27 AM 1/18/2025

```
Episode 11 Score: 39.0
Episode 12 Score: 38.0
Episode 13 Score: 48.0
Episode 14 Score: 42.0
Episode 15 Score: 34.0
Episode 16 Score: 58.0
Episode 17 Score: 38.0
Episode 18 Score: 52.0
Episode 19 Score: 41.0
Episode 20 Score: 40.0
Episode 21 Score: 30.0
Episode 22 Score: 47.0
Episode 23 Score: 37.0
Episode 24 Score: 31.0
Episode 25 Score: 47.0
Episode 26 Score: 52.0
Episode 27 Score: 49.0
Episode 28 Score: 61.0
Episode 29 Score: 26.0
Episode 30 Score: 35.0
Episode 31 Score: 38.0
Episode 32 Score: 38.0
Episode 33 Score: 58.0
Episode 34 Score: 47.0
Episode 35 Score: 34.0
Episode 36 Score: 42.0
Episode 37 Score: 47.0
Episode 38 Score: 47.0
Episode 39 Score: 39.0
Episode 40 Score: 49.0
Episode 41 Score: 37.0
Episode 42 Score: 44.0
Episode 43 Score: 37.0
Episode 44 Score: 39.0
Episode 45 Score: 45.0
Episode 46 Score: 62.0
Episode 47 Score: 35.0
Episode 48 Score: 39.0
Episode 49 Score: 41.0
Episode 50 Score: 39.0
```

Screenshot of a Microsoft Visual Studio Code (VS Code) interface showing a Python environment for a reinforcement learning task.

The workspace contains two files:

- `cartpole.py`
- `mountaincar.py`

The `mountaincar.py` file is open in the editor, displaying the following code:

```
# Initialize font for Pygame
if font is None:
    pygame.font.init()
    font = pygame.font.SysFont("Arial", 24)

# Task 3: Display Episode + Score in blue
surf = pygame.display.set_mode((400, 300))
font = pygame.font.Font(None, 36)
text = font.render("Episode: 0 Score: 0", True, (0, 0, 255))

# Task 4: Bounce ball
env = gym.make('MountainCar-v0')
state = env.reset()
for t in range(1000):
    env.render()
    action = env.action_space.sample()
    state, reward, done, info = env.step(action)
    if done:
        break

print(f"\nFinal score: {info['episode_reward']}")

# Task 5: Train
env.close()
pygame.quit()
```

A terminal window shows the output of the code execution:

```
State: [-0.19622701  0.04666139]
State: [-0.1566448  0.0395822]
State: [-0.1182916  0.03035321]
State: [-0.08128262  0.03700899]
State: [-0.04509967  0.03558294]
State: [-0.01159327  0.0341864]
State: [0.02101464  0.03266791]
State: [0.05212752  0.03111288]
```

The bottom status bar indicates the environment is running at 44°F.

Screenshot of a Microsoft Visual Studio Code (VS Code) interface showing a Python development environment.

The workspace contains two files:

- `cartpole.py`
- `mountaincar.py`

The `mountaincar.py` file is open in the editor, displaying the following code:

```
# Initialize font for Pygame
if font is None:
    pygame.font.init()
    font = pygame.font.SysFont("Arial", 24)

# Task 3: Display Episode + Score in blue
surf = pygame.window
tex = surf
surf = scores.

print(f"\n{episodes} episodes completed with final score {scores:.2f}\n")
print("Task 4: Run until the cart reaches the goal position")
env.close()
pygame.quit()

# Task 4: Run until the cart reaches the goal position
```

A floating window displays a screenshot of a Pygame simulation of the Mountain Car problem. A black car is at the bottom of a curved track, facing right. A yellow flag marks the goal at the top of the curve. The track is white with a black outline.

The terminal output shows the state of the car over time:

```
State: [-0.35007182  0.03154556]
State: [-0.3187697  0.03130211]
State: [-0.28790894  0.03086676]
State: [-0.25767222  0.03023673]
State: [-0.228225  0.02944722]
State: [-0.19971433  0.02851865]
State: [-0.17226823  0.02744611]
State: [-0.14599563  0.0262726]
```

The status bar at the bottom indicates the file is 55 lines long, has 1 space, uses UTF-8 encoding, and is in Python mode. The date and time shown are 1/18/2025 at 12:30 AM.

The screenshot shows a Python development environment with the following details:

- File Explorer:** Shows files `cartpole.py` and `mountaincar.py` under the `LAB.PY` folder.
- Code Editor:** The `mountaincar.py` file is open, displaying Python code for a reinforcement learning task. The code includes initializing Pygame font, rendering episode and score text, updating the display, and printing episode statistics. It also handles closing the environment and quitting Pygame.
- Terminal:** The terminal shows the output of the script, including state information and an episode summary: "Episode 50 Steps: 91 Score: -91.0".
- Output:** The output tab shows the same state and episode summary.
- Debug Console:** The Python Debug Console tab is visible.
- Problems:** No problems have been detected in the workspace.
- Outline:** The outline tab is visible.
- Timeline:** The timeline tab is visible.
- Status Bar:** The status bar shows the current file is `lab.py`, line 55, column 1, with tabs for Spaces, UTF-8, CRLF, Python, and Go Live.