D-CODE @ DMACC

CODING COMPETITION

Fall 2025 Challenge

Virtual Pet Problem Statement

Requirements:

- The player will be provided with the opportunity to name their virtual pet and interact with it during the game.
    - These various interactions will directly impact the virtual pet.
    - The player will have real-time feedback on the current state of the virtual pet.
- Provide a bug-free, functioning virtual pet program that is either endless or time-based.
- Must be a standalone online, desktop, or mobile app
- Can be coded in any language (i.e., Python, Java, C#, HTML5, JavaScript, or Scratch)
    - The code must be original. Programming concepts may be learned from miscellaneous sources (online, books, etc.) but you may not use code provided by any of these sources.

Deliverables:

- Team Registration Form, which includes the Game Proposal (see below for template)
- Functioning code, both the readable code and an executable
- One-page marketing brochure (i.e., an advertisement that must include the Team Name)

Evaluation Scale:

- The projects will be graded using three different levels. The teams work through the problem and where they stop (i.e., which features they complete) dictates which level the project will be evaluated. See the charts below for the levels and corresponding features.

GAME SPECIFICATIONS

Pet Attributes, States, and Activities

- **Mandatory Attributes**
  - Name
  - Type
    - For example, cat, dog, snake, or fictional character
  - Weight
  - Image
- **Mandatory States**
  - Happiness
  - Health
  - Energy
  - Hunger

Evaluation Scale	Pet ACTIVITIES	Pet ATTRIBUTES & STATES				
		Weight	Happiness	Health	Energy	Hunger
1	Asleep – *goes to sleep after a certain amount of time of idleness*			(+1)	(+1)	(+1/2)
1	Feed • meal • treat	 (+1) (+2)		 (+1) x	 (+1) x	 (-1) (-1/2)
1	Walk	(-1)	(+1)	(+1)	(-1)	(-1)
1	Play	(- 2)	(+2)	(+2)	(- 2)	(- 2)
1	Hungry	(-1)	(-1)			
2	Very hungry – *gets very hungry after a certain amount of time as hungry*	(- 2)	(- 2)	(-1)	(-1)	
2	Take to doctor		(-1)	(+2)		
2	Attend training		(+1)		(-1)	(-1)
3	*Team Defined Activities* – stated in the marketing brochure	*Team Defined*				

Game States

Evaluation Scale	State	Tasks
1	Start	• Player names pet • Timer starts
1	Idle	• Timer continues
1	Asleep	• Enters when idle for more than a predetermined time • To wake up, select any activity

1	Game Over	• If either of the following **Pet Attributes** or **States** reaches zero
		  ○ Weight
		  ○ Health
		  ○ Timer

2	Pause	• Timer stops • To un-pause, select Pause again, and the timer starts
3	Save	• Save **Pet Attributes** and **States**, along with the timer
3	Load	• Load **Pet Attributes** and **States**, along with the timer • Start timer
3	*Team Defined State*	*As stated in the marketing brochure*

Possible Additional Features

Evaluation Scale	Feature
3	Object-oriented design
3	Input validation
3	Try-catch for error handling
3	Animated images for each state (sleeping, eating, playing, etc.)
3	The player can choose from a list of different characters, each with different attributes
3	*Team Defined Feature – as stated in the marketing brochure*

Game Proposal

Team Name:

Name of Game:

Description of Game (*should be used in the marketing brochure*):

Development Language (i.e., Python, Java, C#, etc.):
Gameplay Platform (i.e., PC, Mac, Android, iOS):

The following are your initial thoughts. You may add to this list during development.

- Pet Attributes
- Activities
- Game States