

Lab 12b Assignment 1

By submitting this assignment, I agree to the following:

“Aggies do not lie, cheat, or steal, or tolerate those who do”

“I have not given or received any unauthorized aid on this assignment”

Name: Rushil Udani

Section: 219

Assignment: 12b Assignment 1

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A. List of Functions

- `get_basics`
 - Purpose: Get user selections for bird and planet.
 - Parameters: None
 - Return values: (`bird`, `gravity`) where `bird` is an element of `BIRDS`, and `gravity` is the gravity of the planet.
 - Other functions: `bird_picker`, `planet_picker`.
- `bird_picker`
 - Purpose: Get user selection for bird.
 - Process: Print a menu of all birds; Get user selection; Return associated bird.
 - Parameters: None; depends on `BIRDS`
 - Return values: (`name`, `color`, `size`), an element of `BIRDS`
 - Other functions: None
- `planet_picker`
 - Purpose: Get user selection for planet.
 - Process: Print a menu of all planets; Get user selection; Return associated planet.
 - Parameters: None; depends on `PLANETS`
 - Return values: (`name`, `gravity`), an element of `PLANETS`
 - Other functions: None
- `get_guesses`
 - Purpose: Get user guesses for velocity and launch angle.
 - Parameters: None
 - Return values: (`vel`, `angle`)
 - Other functions: None
- `trajectory`
 - Purpose: Calculate points along the bird's flight path.
 - Parameters: `gravity`, `vel`, `angle`
 - Return values: None
 - Other functions: `trajectory_y`
- `hit`
 - Purpose: Determine whether the target was hit or not.

- Parameters: `xs, ys, target` (given as `(x, y, size)`)
- Return values: `bool`
- Other functions: None
- `birds_plot`
 - Purpose: Plot and show a picture of the scene.
 - Parameters: `xs, ys, target` (given as `(x, y, size)`), `bird` (as an element of `BIRDS`)
 - Return values: None
 - Other functions: `hit`
- `trajectory_y`
 - Purpose: Calculate the height of a point on a trajectory.
 - Parameters: `x, gravity, vel, angle`
 - Return values: `y`
 - Other functions: None

B. Hierarchy for Lab12 Program 1

