

# Lab 12 Planning Document

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”

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Section: 219

Assignment: Team Project Planning Document

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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

