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Lab 1

Project: **Mars Perseverance Rover**

Git**:** **https://github.com/dgonz386/DanielGonzalezLab1**

Class: Sensors

Attributes:

- Sensor sizes
- Number of sensors
- Number of cameras
- Number of lights
- Type of cameras
- Location of cameras

Operations:

- Depth
- Camera
- Range
- Collision detection
- Speed
- Temperature
- Altitude
- Light
- Contact pressure

Class: Robotic Arm

Attributes:

- Length size
- Weight
- Metal framing thickness and housing
- Rotation X, Y Axis joints
- 360 turn bearings

Operations:

- Drill
- Grapple
- Drill camera
- Collect items

Class: Communication Systems

Attributes:

- Size of antenna
- Number of antennas
- Type of antennas

Operations:

- Transmit
- Receive
- Communication frequencies to earth, in mars
- Backup computer

Class: Power Supply

Attributes:

- Size of battery
- Number of batteries
- Size of solar panel

Operations:

- Battery
- Solar panel

Class: Storage

Attributes:

- Computer storage housing
- Battery Storage size
- Sample Collection storage bin

Operations:

- Physical storage (Slots for samples)
- Computing storage (Hard drive)
- Computational Systems (CPU, GPU, RAM)

Class: Chassis

Attributes:

- Wheel size
- Body structure
- Wheel Threading and grip
- Wheel rim structure
- Shock absorption
- Hydraulic suspensions systems
- Rotary systems

- Loading hook

Operations:

- Turn left
- Turn right
- Pitch inclination
- Movement forward
- Move backwards
- Impact resistance
- Calibration
- Brake
- Balance

Class: Computer System

Attributes:

- Processing Power
- Computer size
- Operating System

Operations:

- Updates
- Connection to other systems

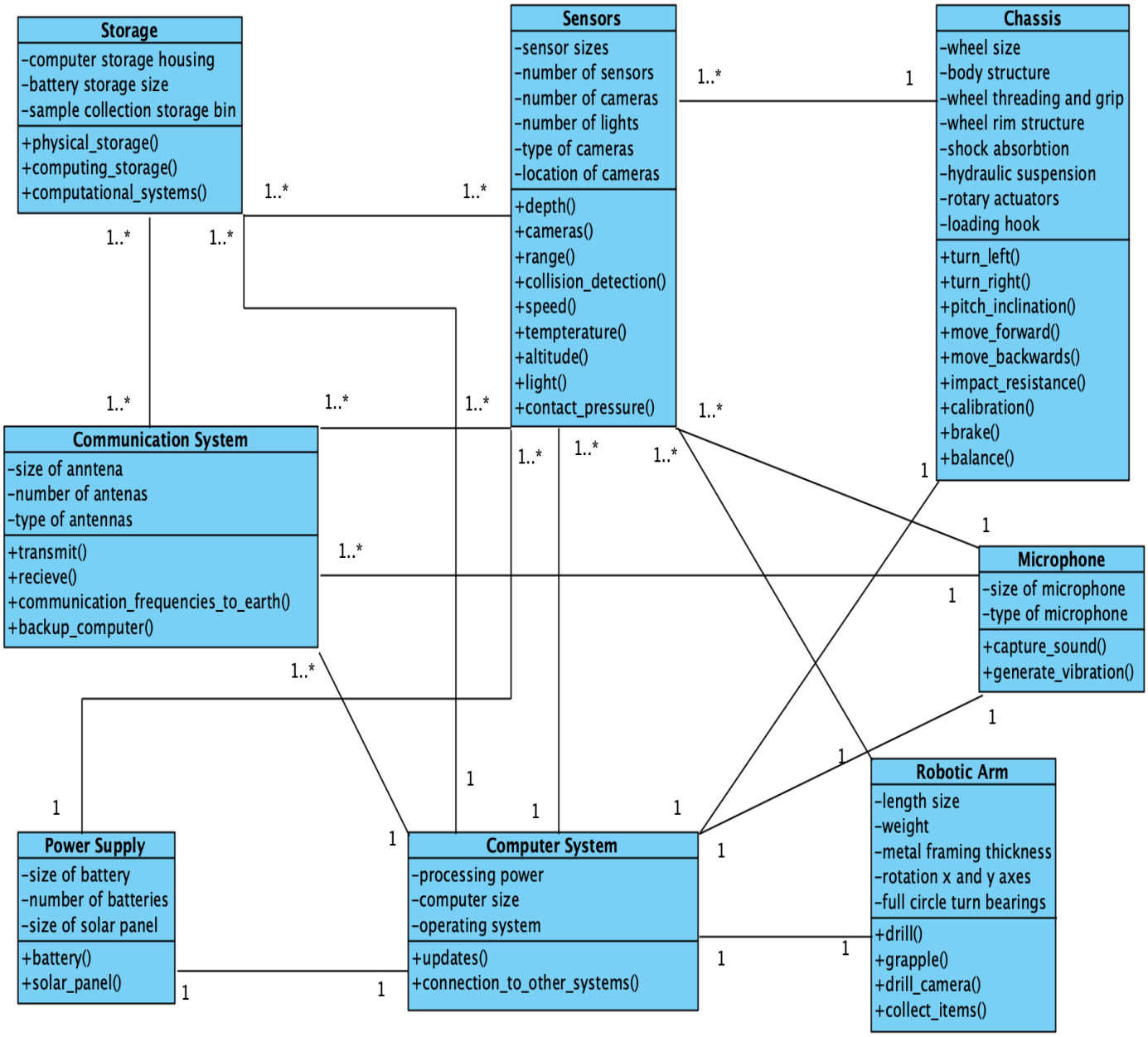
Class: Microphone

Attributes:

- Size of microphone
- Type of microphone

Operations:

- Capture sound
- Generate vibrations


Storage
-computer storage housing
-battery storage size
-sample collection storage bin
+physical_storage()
+computing_storage()
+computational_systems()
Sensors
-sensor sizes
-number of sensors
-number of cameras
-number of lights
-type of cameras
-location of cameras
+depth()
+cameras()
+range()
+collision_detection()
+speed()
+tempterature()
+altitude()
+light()
+contact_pressure()
Chassis
-wheel size
-body structure
-wheel threading and grip
-wheel rim structure
-shock absorbtion
-hydraulic suspension
-rotary actuators
-loading hook
+turn_left()
+turn_right()
+pitch_inclination()
+move_forward()
+move_backwards()
+impact_resistance()
+calibration()
+brake()
+balance()
Communication System
-size of anntena
-number of antenas
-type of antennas
+transmit()
+recieve()
+communication_frequencies_to_earth()
+backup_computer()
Microphone
-size of microphone
-type of microphone
+capture_sound()
+generate_vibration()
Power Supply
-size of battery
-number of batteries
-size of solar panel
+battery()
+solar_panel()
Computer System
-processing power
-computer size
-operating system
+updates()
+connection_to_other_systems()
Robotic Arm
-length size
-weight
-metal framing thickness
-rotation x and y axes
-full circle turn bearings
+drill()
+grapple()
+drill_camera()
+collect_items()
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