Conrad Provan

1. **acoustic proximity fuze**: a trigger that is triggered when a sound is heard within a specific proximity
   source: [@en.wikipedia.org/wiki/Proximity_fuze#Acoustic]
   category: noun
   data: acoustic sensor (static, used to listen), Trigger (dynamic, activates when sensor reads a specific threshold.)
   control: sensor tells trigger when to activate
   behavior: naval mines utilize an acoustic fuze to detonate.
   role: processing, process incoming data from sensor
   pattern: creational, must be defined, Structural, it's a part of a bigger system
   concern: controller, gets data, and manipulates a model
   difficulty: easy, takes an input, the processes the input and provides an output
   risk: moderate, if done wrong, weapons wouldn't work properly or even at all
   presentation: a check box that is labeled and will be checked when activated

2. **acoustic sensor**: sensors that detect sound via microphone
   source: [@www.sunmantechnology.com/system-ip/acoustic-sensors.html]
   category: noun
   data: Microphone (static, doesn't move)
   control: listens for sound and sends data to system
   behavior: used to detect incoming aircrafts
   role: input, gets data so that the other systems can act on that data
   pattern: creational, must be defined, structural, a part of a larger system
   concern: view, gets input to controller to be processed
   difficulty: hard, code that can locate objects by reflecting waves off them
   risk: high, if done wrong units unable to see underwater
   presentation: small circle with a label, displays details when clicked on

3. **acquisition process**: the process in which a target is acquired.
   source: [@en.wikipedia.org/wiki/Military_acquisition]
   category: noun
   data: target (Dynamic, could be moving location), a retriever (Dynamic, going after the target)
   control: target is the subject of interest, retriever goes to acquire the target
   behavior: units need to preform acquisition process to acquire resources
   role: processing, it's a process
   pattern: behavioral, describes the behavior of an object
   concern: view, to keep track of the location of the object
   difficulty: moderate, has to do with movement of objects
   risk: high, if done wrong, objects might not be able to move corectly
   presentation: dotted line and arrow showing path of movement, labeled

4. **active radar sensor**: a sensor that uses a radar transmitter and a receiver, to locate objects
   source: [@en.wikipedia.org/wiki/Radar]
   category: noun
   data: receiver (static, it does not move), transmitter (static, it does not move)
   control: it can send radar waves to identify useable obstacles
   behavior: used to identify enemy units.
   role: input, gets data so that the other systems can act on that data
   pattern: creational, must be defined, structural, a part of a larger system
   concern: view, gets input to controller to be processed

difficulty: hard, code that can locate objects by reflecting waves off them
risk: high, if done wrong units unable to see underwater
presentation: small circle with a label, displays details when clicked on

5. **active sonar sensor**: a sensor that uses a sound transmitter and a receiver, to locate objects
   source: [@en.wikipedia.org/wiki/Sonar#Active_sonar]
   category: noun
   data: receiver (static, it does not move), transmitter (static, it does not move)
   control: it can send sonar waves to identify useable obstacles
   behavior: used to identify enemy units.
   role: input, gets data so that the other systems can act on that data
   pattern: creational, must be defined, structural, a part of a larger system
   concern: view, gets input to controller to be processed
   difficulty: hard, code that can locate objects by reflecting waves off them
   risk: high, if done wrong units unable to see underwater
   presentation: small circle with a label, displays details when clicked on

6. **actuator**: a component of a machine that is responsible for moving and controlling a mechanism or system
   source: [@en.wikipedia.org/wiki/Actuator]
   category: noun
   data: Control signal (dynamic, the signal can change) source of energy (static the source of energy doesn't move)
   control: it can convert energy into mechanical motion
   behavior: an actuator can open a valve when signaled to
   role: output, it preforms an action once it receives a signal
   pattern: creational, it must be defined, structural, it is part of a larger system.
   concern: model, it gets manipulated, controller, it manipulates
   difficulty: moderate, must take in input, and execute and action
   risk: high, if done wrong, actions could have unwanted consequences
   presentation: a small switch that lights up when activated

7. **attenuation**: the reduction of the amplitude of a signal, electric current, or other oscillation.
   source: [@en.wikipedia.org/wiki/Attenuation]
   category: noun
   data: material (Static, the material doesn't change) the waves (Dynamic, change as the pass through the material)
   control: can be used for sound dampening
   behavior: used in ships for dampening the sound of the motors
   role: output, it's a result of waves moving through a material
   pattern: behavioral, describes the behavior of waves
   concern: controller, controls the way waves interact with different substances
   difficulty: hard, there are many different waves and different materials to account for
   risk: moderate, relatively simple code
   presentation: show the waves fade while going through an object

8. **battleship**: a heavy warship with extensive armor and large-caliber guns.
   source: [@en.wikipedia.org/wiki/Battleship]
   category: noun
   data: Movement (Dynamic, changing location), Attacking (Dynamic, firing weapons)
   control: it can fire weaponry, and travers the water

behavior: it's used in military operations to attack enemy naval units
role: output, military unit used to attack and defend on water
pattern: creational, because it must be defined
concern: model because its manipulated, view because we need to see the state
difficulty: hard, it involves motion
risk: high because it involves code for motion, shooting, and targeting
presentation: a labeled green 2D outline of a boat

9. **bomb**: an explosive weapon, utilizing the exothermic reaction of explosive material
   source: [@en.wikipedia.org/wiki/Bomb]
   category: noun
   data: explosive material (Dynamic, explodes), fuze (Dynamic, triggers the explosion)
   control: it can explode
   behavior: used to cause extreme damage from a distance
   role: output, causes an explosion
   pattern: creational, because it must be defined, structural because they can be part of other weapons
   concern: model, because it gets manipulated, view to see its state
   difficulty: moderate, it involves code that effects the surrounding area
   risk: high, could detonate premature, or not at all
   presentation: large red circle, labeled

10. **bomber aircraft**: a military aircraft that attacks ground targets by dropping bombs
    source: [@en.wikipedia.org/wiki/Bomber]
    category: noun
    data: Movement (Dynamic, changing location), Attacking (Dynamic, firing weapons)
    control: it can attack ground targets by dropping bombs on them
    behavior: it's used to cause heavy damage to ground targets with low risk to the actual unit
    role: output, military unit used to attack ground from air
    pattern: creational, because it must be defined
    concern: model because its manipulated, view because we need to see the state
    difficulty: hard, it involves motion
    risk: high because it involves code for motion, shooting, and targeting
    presentation: a labeled green 2D outline of a plane

11. **countermeasure**: a measure or action taken to offset another action
    source: [@en.wikipedia.org/wiki/Countermeasure]
    category: noun
    data: movement (Dynamic, changing location)
    control: it can offset another action
    behavior: used to prevent an undesirable outcome
    role: output, an action taken in response to another action
    pattern: behavioral, its how an object responds
    concern: view, has to do with the state of the object
    difficulty: hard, has to do with motion and interaction with other objects
    risk: high, if done wrong, countermeasures could fail or not work
    presentation: dotted line and arrow showing path of movement, labeled

12. **cross-section/reflectivity**: a measure of an objects' reflectivity
    source: [@copradar.com/chapts/chapt3/ch3d6.html]
    category: noun

data: reflectivity (Static, a property of an object)
control: knowing the reflectivity allows us to tell the type of material
behavior: used to tell whether something on the radar is a threat or not
role: input, data that other systems can act on
pattern: structural it is a component of another object
concern: view, sends data to the controller
difficulty: easy, just a simple property
risk: moderate, if done wrong can cause objects to be distinguished incorrectly
presentation: I don't see a need to have a visual of this one

13. **defensive maneuver**: a type of movement employed to deny an attack from enemy weapons or units
    source: [@www.flightsimbooks.com/f15strikeeagle/05_04_Defensive_Maneuvers.php]
    category: noun
    data: attacker (dynamic, attacking), defender (Dynamic, changing location)
    control: movement to deny incoming attacks
    behavior: captains use defensive maneuvers to evade enemy fire
    role: output, it's a result of the input of the captain
    pattern: behavioral, it is a way to manipulate an object
    concern: view, has to do with the state of the ship
    difficulty: moderate, involves motion of an object
    risk: high, it involves motion
    presentation: dotted line and arrow showing path of movement, labeled

14. **depth charge**: an anti-submarine warfare weapon
    source: [@www.ussslater.org/tour/weapons/dpthchrg/dpthchrg.html]
    category: noun
    data: depth fuze (Dynamic, triggers explosion), charge (Dynamic, explodes)
    control: it can explode at specific depths
    behavior: used to attack submarines
    role: output, a weapon used in response to nearby enemies
    pattern: creational, because it must be defined
    concern: view, to see state, model, because it is manipulated
    difficulty: easy, takes in data and acts on the data
    risk: moderate, if done wrong the charge could detonate to early
    presentation: large red circle, labeled

15. **depth fuze**: a trigger that activates at a designated depth
    source: [@en.wikipedia.org/wiki/Fuze]
    category: noun
    data: depth sensor (static, recording data), trigger (Dynamic, activates)
    control: it can trigger a weapon to fire once something enters a specific depth.
    behavior: it is used to cause weapons to activate once a target enters a specific depth.
    role: processing, it takes in an input and gives out an output
    pattern: behavioral, communicates between two objects
    concern: controller, updates the object it's connected to after receiving input
    difficulty: easy, takes an input, the processes the input and provides an output
    risk: moderate, if done wrong, weapons wouldn't work properly or even at all
    presentation: a check box that is labeled and will be checked when activated

16. **destroyer**: a fast, maneuverable, and long-endurance warship
    source: [@en.wikipedia.org/wiki/Destroyer]

category: noun
data: Movement (Dynamic, changing location), Attacking (Dynamic, firing weapons)
control: protects larger ships, attacks enemy ship
behavior: attacks other ships, maneuvers in water
role: output, military unit used to attack and defend in the water
pattern: creational, because it must be defined
concern: model because its manipulated, view because we need to see the state
difficulty: hard, it involves motion
risk: high because it involves code for motion, shooting, and targeting
presentation: a labeled green 2D outline of a boat

17. **distance fuze**: a trigger that activates at a designated distance from a target
source: [@en.wikipedia.org/wiki/Fuze#Proximity_fuze]
category: noun
data: distance sensor (Static, records data), trigger (Dynamic, activates)
control: it can trigger a weapon to fire once something enters a specific distance.
behavior: it is used to cause weapons to activate once a target enters a specific distance.
role: processing, it takes in an input and gives out an output
pattern: behavioral, communicates between two objects
concern: controller, updates the object it's connected to after receiving input
difficulty: easy, takes an input, the processes the input and provides an output
risk: moderate, if done wrong, weapons wouldn't work properly or even at all
presentation: a check box that is labeled and will be checked when activated

18. **engagement process**: the process in which one unit engages another unit
source: [@en.wikipedia.org/wiki/Engagement_(military)]
category: noun
data: a target (Dynamic, it could be moving) engager (Dynamic, moving toward target)
control: the process in which one force engages another force
behavior: describes the way in an object(s) engages another object(s)
role: processing, it's a process that will end with an outcome
pattern: behavioral, have an object behaves
concern: view, how an object moves
difficulty: moderate, has to do with movement of objects
risk: high, if done wrong, objects might not be able to move when needed
presentation: dotted line and arrow showing path of movement, labeled

19. **evasive maneuver**: movement to avoid incoming obstacles
source: [@memory-alpha.wikia.com/wiki/Evasive_maneuvers]
category: noun
data: attacker (Dynamic, attacking) operator (Dynamic, Evading the attacker)
control: movement to avoid incoming obstacles
behavior: captains use evasive maneuvers to evade enemy fire
role: output, it's a result of the input of the captain
pattern: behavioral, it is a way to manipulate an object
concern: view, has to do with the state of the ship
difficulty: moderate, involves motion of an object
risk: high, it involves motion
presentation: dotted line and arrow showing path of movement, labeled

20. **fighter aircraft**: a military aircraft designed primarily for air to air combat

source: [@en.wikipedia.org/wiki/Fighter_aircraft]
category: noun
data: Movement (Dynamic, changing location), Attacking (Dynamic, firing weapons)
control: flies, and fires weapons
behavior: used in air to air military operations
role: output, military unit used to attack and defend in the air
pattern: creational, because it must be defined
concern: model because its manipulated, view because we need to see the state
difficulty: moderate, it involves motion
risk: high because it involves code for motion, shooting, and targeting
presentation: a labeled green 2D outline of a plane

21. **lethality process**: the process in which something is lethal
source: [@en.wikipedia.org/wiki/Lethality]
category: noun
data: a weapons lethality (Static, value)
control: the process that makes a weapon lethal
behavior: a missile being fired at a target
role: processing, it's a process
pattern: behavioral, it describes the behavior of an object
concern: controller, it manipulates a model
difficulty: hard, since the process can very based on the weapon or object
risk: high, if done wrong weapons would not function as expected
presentation: I don't see a need to have a visual of this one

22. **main battery gun**: the primary weapon or group of weapons around which a warship is designed
source: [@en.wikipedia.org/wiki/Main_battery]
category: noun
data: aiming (Dynamic, changing targets), firing (Dynamic, attacking)
control: can aim and launch projectiles at targets, dynamic, it moves
behavior: used to attack enemy units in time of battle
role: output, it is a weapon that supports in attacking and defending
pattern: creational because it must be defined, structural because it's a part of warships
concern: model because its manipulated, view because we need to see the state
difficulty: moderate, it involves motion
risk: high because it involves code for motion, shooting, and targeting
presentation: red labeled cylinder

23. **missile**: guided, self-propelled system with a warhead
source: [@en.wikipedia.org/wiki/Missile]
category: noun
data: guiding system (dynamic, adjusting trajectory), rocket (Dynamic, changing the location), warhead (Dynamic, explodes)
control: it can propel itself to a target and explode
behavior: used to inflict large amounts of damage to enemies
role: output, it's a weapon for destroying stuff
pattern: creational, because it must be defined, behavioral, because the guiding system
concern: model, because it's something that's manipulated.
difficulty: hard, its composed of many sub systems that all must work together
risk: high risk because of all the different components having to work together
presentation: a labeled green 2D outline of a missile

24. **mobility process**: the process in which a weapons system or combat unit moves
    source: [@en.wikipedia.org/wiki/Mobility_(military)]
    category: noun
    data: location (Static, location to be moved to)
    control: it can move a combat unit to a military objective
    behavior: moving a ship to a location requested
    role: output, its how a ship moves from one location to another
    pattern: behavioral, how a ship behaves
    concern: view, alters the state of the ship
    difficulty: moderate, must deal with moving objects
    risk: moderate, must hand code for movement
    presentation: dotted line and arrow showing path of movement, labeled

25. **munition**: materials of war, weapons, ammunition, armaments
    source: [@en.wiktionary.org/wiki/munition]
    category: noun
    data: materials of war (Dynamic, they get used)
    control: can be used to attack or defend in military combat
    behavior: used in military combat to attack and defend
    role: input, because they get used
    pattern: creational, because they must be defined
    concern: model, they get manipulated
    difficulty: moderate, each one needs to be defined
    risk: high, if done wrong the actions of the munition wouldn't work
    presentation: red labeled square

26. **offensive maneuver**: a type of maneuver to put a ship in an offensive position
    source: [@en.wikipedia.org/wiki/Basic_fighter_maneuvers]
    category: noun
    data: a target (Dynamic, it could be moving) attacker (Dynamic, moving toward target)
    control: helps an attacker get the upper hand in a confrontation
    behavior: a captain uses an offensive maneuver to get the upper had on the enemy ship
    role: output, it's a result of the input of the captain
    pattern: behavioral, it is a way to manipulate an object
    concern: view, has to do with the state of the ship
    difficulty: moderate, involves motion of an object
    risk: high, it involves motion
    presentation: dotted line and arrow showing path of movement, labeled

27. **passive radar sensor**: a sensor that picks up radar waves without giving any off
    source: [@en.wikipedia.org/wiki/Passive_radar]
    category: noun
    data: receiver (Static, reads waves)
    control: reads radar waves that transmit form third party transmitters
    behavior: used to detect objects or enemy ships without being detected
    role: input, it collects data
    pattern: creational because it must be defined
    concern: controller, updates the object it's connected to after receiving input
    difficulty: easy, takes an input, the processes the input and provides an output

risk: moderate, if done wrong, weapons wouldn't work properly or even at all
presentation: small circle with a label, displays details when clicked on

28. **passive sonar sensor**: sensor that reads sonar waves without giving any off
    source: [@en.wikipedia.org/wiki/Sonar#Passive_sonar]
    category: noun
    data: receiver (Static, reads waves)
    control: it can listen to sonar waves, without transmitting any
    behavior: used to listen for enemy subs or mines
    role: input, it collects data
    pattern: creational because it must be defined
    concern: controller, updates the object it's connected to after receiving input
    difficulty: easy, takes an input, the processes the input and provides an output
    risk: moderate, if done wrong, weapons wouldn't work properly or even at all
    presentation: small circle with a label, displays details when clicked on

29. **power**: a quantitative measurement of energy
    source: [@https://en.wikipedia.org/wiki/Power_(physics)]
    category: noun
    data: amount of energy (Dynamic, the amount of energy can change)
    control: it can cause damage, be read by sensors, or used to cause actions
    behavior: heat sensors read the amount of power in the form of temperature
    role: input, when being read as data, output when being used to cause an action
    pattern: creational, because it must be defined, structural because it is a part of some objects
    concern: model because it can be manipulated, view so we can see the state
    difficulty: easy, this is more of an attribute to be read
    risk: high, if done wrong interactions between objects can fail
    presentation: I don't see a need to have a visual of this one

30. **radar proximity fuze**: a trigger that activates when radar waves come within range
    source: [@en.wikipedia.org/wiki/Fuze#Proximity_fuze]
    category: noun
    data: radar sensor (static, reads data), trigger (Dynamic, activates)
    control: it can trigger a weapon to fire after once something enters its radar.
    behavior: it is used to cause weapons to activate once an object enters a specific radar.
    role: processing, it takes in an input and gives out an output
    pattern: behavioral, communicates between two objects
    concern: controller, updates the object it's connected to after receiving input
    difficulty: easy, takes an input, the processes the input and provides an output
    risk: moderate, if done wrong, weapons wouldn't work properly or even at all
    presentation: a check box that is labeled and will be checked when activated

31. **sensor**: a data collection device
    source: [@en.wikipedia.org/wiki/Sensor]
    category: noun
    data: sensor (Dynamic, reads data)
    control: can collect data and report that data to another system
    behavior: used to collect data, and report to different systems
    role: input, it collects data
    pattern: creational because it must be defined
    concern: view, because it sends input to the controller

difficulty: easy, all it must do is send data
risk: low, not any moving parts
presentation: small circle with a label, displays details when clicked on

32. **sensor fusion**: software made to combine data from multiple sensors
source: [@en.wikipedia.org/wiki/Sensor_fusion]
category: noun
data: data (Static, inputted data)
control: able to combine data from many sensors
behavior: used to combine data do there are less uncertainties
role: processing, because it's manipulating the data it receives.
pattern: behavioral, because its acting on input to perform a function
concern: controller, because it acts on data
difficulty: hard, combining multiple sets of data and making it all work has many ways to fail
risk: high, if done wrong it could cause issues in many other places
presentation: I don't see a need to have a visual of this one

33. **submarine**: a vehicle able to maneuver under and on top of water
source: [@en.wikipedia.org/wiki/Submarine]
category: noun
data: composed of many systems, like maneuvering, weapons, ect (Dynamic, because there is motion)
control: it can dive under water, rise above water, change direction and launch weapons
behavior: they are used to survey waters and create blockades from enemies
role: output, because it is a vehicle used for military practices
pattern: creational because it must be defined, structural because it is made of many parts
concern: model because it is something manipulated
difficulty: hard, because it is made up of many smaller parts
risk: high because if any part is wrong it could cause issues.
presentation: a labeled green 2D outline of a submarine

34. **thermal proximity fuze**: an object to trigger another object do to temperature
source: [@en.wikipedia.org/wiki/Fuze#Proximity_fuze]
category: noun
data: thermal sensor (Static, just collects data) trigger (Dynamic, triggers action)
control: it can trigger a weapon to fire after once it reaches a specific temperature.
behavior: it is used to cause weapons to activate once a the fuze hits a specific temperature.
role: processing, it takes in an input and gives out an output
pattern: behavioral, communicates between two objects
concern: controller, updates the object it's connected to after receiving input
difficulty: easy, takes an input, the processes the input and provides an output
risk: moderate, if done wrong, weapons wouldn't work properly or even at all
presentation: a check box that is labeled and will be checked when activated

35. **thermal sensor**: a data collection device that collects data on temperature
source: [@www.cpinc.com/Trerice/Temperature/63%20-%2064%20temperature.pdf]
category: noun
data: data collector (Static, does not move)
control: it collects data of temperature and sends that data off to be processed
behavior: takes in data and sends data to be analyzed
role: input, collects data and sends it to process

pattern: behavioral, used to determine the behavior of what's it connected to.
concern: controller, because it manipulates how the model should behave
difficulty: easy, should just be a simple piece of data collection script
risk: low risk because it shouldn't be all that har to write
presentation: small circle with a label, displays details when clicked on

36. **timed fuze**: a trigger that activates after a set period
    source: [@en.wikipedia.org/wiki/Fuze#Time_fuze]
    category: noun
    data: timer (dynamic, timer changes), trigger (dynamic, used to activate)
    control: it can trigger a weapon to fire after a set period.
    behavior: it is used to be able to delay the activation of a weapon after its been triggered.
    role: processing, it takes in an input and gives out an output
    pattern: behavioral, communicates between two objects
    concern: controller, updates the object it's connected to after receiving input
    difficulty: easy, takes an input, the processes the input and provides an output
    risk: moderate, if down wrong, weapons wouldn't work properly or even at all
    presentation: a check box that is labeled and will be checked when activated

37. **torpedo**: a self-propelled weapon with an explosive warhead
    source: [@en.wikipedia.org/wiki/Torpedo]
    category: noun
    data: thruster (dynamic, used to move the whole object), warhead (dynamic, it explodes)
    control: it can propel its self through water and explode either on contact with an object or in proximity to an object
    behavior: used in war to damage enemy ships
    role: output, it is a result of
    pattern: behavioral, because this acts on an object
    concern: controller, because it responds to input and acts on another object
    difficulty: moderate, this must respond to one object and act on another object
    risk: moderate risk, since it has to interact with other object giving opportunity for failure.
    presentation: small red triangle with a T in the middle

38. **triangulation**: a process using geometry using triangles to locate an object
    source: [@en.wikipedia.org/wiki/Triangulation]
    category: noun
    data: known objects (static, not moving), unknown object (dynamic, could be moving)
    control: it can find location of points by forming triangle to it from known points
    behavior: used to locate ships or objects of interest
    role: processing because it is a process using data from the environment
    pattern: behavioral because it's a process acting on data
    concern: controller because it responds to the input given
    difficulty: easy because it's just a simple math mathematical equation
    risk: moderate, if someone were to mess up the equation it would not work
    presentation: show the triangles crated from each object

39. **trilateration**: a process using geometry to locate objects
    source: [@www.revolvy.com/page/Trilateration]
    category: noun
    data: known objects (static, not moving), unknown object (dynamic, could be moving)
    control: it can find location of points by measurement of distances using geometry

behavior: used to locate ships
role: processing because it is a process using data from the environment
pattern: behavioral because it's a process acting on data
concern: controller because it responds to the input given
difficulty: easy because its just a simple math mathematical equation
risk: moderate, if someone where to mess up the equation it would not work
presentation: show the geometry being used from each object

Total Word Count: 4193