## makersacademy / airport\_challenge

Bad Weather module added

A fully working airport

10

11

Test for plane status and update dependancies on all files

```
makersacademy / airport_challenge
                    airport_challenge / 00_notes / Notes & Diagrams.scap
 Tree: 25424c6706 ▼
                                                                                                                        Find file
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 Fetching contributors...
 Cannot retrieve contributors at this time
 132 lines (126 sloc) | 5.97 KB
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     2
     3
             <Notes>
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     4
     5
                     <Appearance>
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     6
     7
                         <Border Weight="2"></Border>
    8
                     </Appearance>
    9
                     <String>As an air traffic controller
         So I can get passengers to a destination
   10
         I want to instruct a plane to land at an airport
   11
   12
   13
         As an air traffic controller
         So I can get passengers on the way to their destination
   14
         I want to instruct a plane to take off from an airport and confirm that it is no longer in the airport
   15
   16
   17
         As an air traffic controller
        To ensure safety
   18
         I want to prevent takeoff when weather is stormy
   19
   20
   21
         As an air traffic controller
   22
        To ensure safety
   23
         I want to prevent landing when weather is stormy
   24
   25
         As an air traffic controller
   26
        To ensure safety
   27
         I want to prevent landing when the airport is full
   28
   29
         As the system designer
         So that the software can be used for many different airports
   30
         I would like a default airport capacity that can be overridden as appropriate</String>
   31
   32
                 </Note>
                 <Note ID="1" FontSize="21.0" Position="229.0,14.0" Width="124.0">
   33
   34
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   35
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   36
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   37
                     <String>User Stories</String>
   38
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   40
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   41
   42
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   43
                     <String>Analysis
   44
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   47
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                         <Border Weight="2"></Border>
   48
   49
                     </Appearance>
   50
                     <String>Nouns
   51
         Air Traffic Controller
   52
         Plane
   53
         Airport
   54
         Systems Designer
   55
         Weather
   56
   57
         Verbs
   58
         land
   59
         take-off
         confirm
   60
   61
         prevent</String>
   62
                     <Formatting>
   63
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                     </Formatting>
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   68
   69
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   70
                     </Appearance>
   71
                     <String>Possible Actions and Scenaria/String>
   72
                 </Note>
   73
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   74
                     <Appearance>
                         <Alignment>Left</Alignment>
   75
   76
                         <Border Weight="2"></Border>
   77
                     </Appearance>
   78
                     <String>
                                         Plane status (flying/docked)
   79
                         Plane landing (flying —> docked)
```

Errors raised for inconsistent actions (take-off of a flying plane / landing a docked plane)</String>

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Plane takeoff (docked - > flying)

Storms prevent landing /take-off

Full airport cannot accept planes

Variable and default capacity

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Tree: 25424c6706 ▼

airport\_challenge / lib / airport.rb

Find file

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```
Fetching contributors...
```

Cannot retrieve contributors at this time

```
49 lines (37 sloc) 885 Bytes
       require "plane"
       require "hand_of_god"
  2
  3
  4
       class Airport
  5
  6
       # Constants
  7
           CAPACITY = 5
  8
  9
       # Attribute Readers/Writers
  10
         # We use an attr_accessor to accomodate for the ability
 11
         # to expand in the future
         attr_accessor :airp_capacity
  12
 13
         attr_accessor :planes
 14
 15
       # Requiments / Modules
         include Weather
 16
 17
       # Methods
 18
         def initialize(airp_capacity = CAPACITY)
 19
  20
           @airp_capacity = airp_capacity
           @planes = []
  21
  22
         end
  23
  24
         def dock(plane)
           raise "Weather Stormy!! Planes cannot land/dock" if stormy?
  25
  26
           raise "Airport is full, cannot land" if full?
           @planes << plane</pre>
  27
  28
         end
  29
         def launch(plane)
  30
           raise "Weather Stormy!! Planes are Grounded" if stormy?
  31
  32
           raise "There are no planes in the airport" if empty?
  33
           @planes.delete(plane)
  34
  35
         def count_of_planes
  36
           @planes.count
 37
 38
         end
  39
 40
         def full?
 41
           @planes.count >= airp_capacity
  42
 43
 44
         def empty?
           @planes.count <=0</pre>
 45
 46
  47
  48
       end
```

## makersacademy / airport\_challenge

9

end

```
airport_challenge / lib / hand_of_god.rb
Tree: 25424c6706 ▼
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Cannot retrieve contributors at this time
10 lines (6 sloc) | 124 Bytes
       module Weather
   2
   3
           CHANCES_OF_GOOD_WEATHER = 50
   4
           def stormy?
   5
              rand(1..101) > CHANCES_OF_GOOD_WEATHER
   6
           end
   8
```

makersacademy / airport\_challenge

airport\_challenge / lib / plane.rb Tree: 25424c6706 ▼

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```
20 lines (14 sloc) | 293 Bytes
       class Plane
       attr_accessor :flying
   2
   3
          def initialize(flying = false)
  4
           @flying = flying
   5
   6
          end
   7
          def taking_off
   8
            raise "Plane is already in the air" if flying
  9
            @flying = true
  10
  11
          end
  12
          def landing
  13
            raise "Plane is already docked" if !flying
  14
           @flying = false
  15
  16
          end
  17
  18
  19
       end
```

Tree: 25424c6706 ▼ airport\_challenge / spec / airport\_spec.rb

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```
91 lines (76 sloc) | 3.27 KB
       require "airport"
  2
       require "plane"
   3
       require "hand_of_god"
  4
  5
       describe Airport do
  6
         # Name the subject explicitly
   7
             subject(:airport) {described_class.new}
  8
  9
         # Define Doubles
 10
 11
         # Test for initializing an airport
 12
         context "Airport initialization can work both with arguments and without" do
           it "accepts a capacity argument, if not capacity defaults to DEFAULT_CAPACITY" do
 13
                expect{Airport.new(30)}.not_to raise_error
 14
                expect{Airport.new}.not_to raise_error
 15
 16
                expect(subject.airp_capacity).to eq Airport::CAPACITY
 17
           end
 18
         end
 19
 20
         # Tests for Airport responding to methods
 21
         context "Airport responds to various methods" do
 22
              it "plane can land" do
 23
                expect(subject).to respond_to (:dock)
 24
              end
 25
 26
              it "plane can take off" do
                expect(subject).to respond_to (:launch)
 27
 28
              end
 29
              it "airport logs how many planes are docked" do
 30
 31
                expect(subject).to respond_to (:count_of_planes)
  32
              end
 33
          end
 34
 35
         # Test for docking and launching a plane and checking
 36
         # how many planes are in the airport at any given time
 37
         context "Airport is docking & launching planes" do
 38
           # Set stormy? to be false for tests of just docking & launching planes
 39
             before (:each) do allow(airport).to receive(:stormy?).and_return(false) end
 40
             it " - a plane lands" do
                # airport = Airport.new --- Omitted as we have used subject(:airport) {described_class.new}
 41
                plane = Plane.new
 42
                airport.dock(plane)
 43
                expect(airport.count_of_planes).to eq 1
 44
 45
              end
 46
              it " - a plane takes off" do
 47
                # airport = Airport.new --- Omitted as we have used subject(:airport) {described_class.new}
 48
                plane = Plane.new
 49
                airport.dock(plane)
 50
 51
                airport.launch(plane)
 52
                expect(airport.count_of_planes).to eq 0
 53
              end
 54
          end
 55
           # Tests for preventing a plane launching if weather is stormy
 56
           context "Weather conditions are affecting docking & launching" do
 57
 58
 59
               it "stops a plane from launching if stormy" do
 60
               # We need to temporarily set stormy to false, so we can dock a plane
               allow(airport).to receive(:stormy?).and_return(false)
 61
               plane = Plane.new
 62
               airport.dock(plane)
 63
 64
               # We set stormy to true, so we can run our test
               allow(airport).to receive(:stormy?).and_return(true)
 65
               expect{airport.launch(plane)}.to raise_error "Weather Stormy!! Planes are Grounded"
 66
               end
 67
 68
               it "stops a plane from docking if stormy" do
 69
               allow(airport).to receive(:stormy?).and return(true)
 70
 71
               plane = Plane.new
               expect {airport.dock(plane)}.to raise_error "Weather Stormy!! Planes cannot land/dock"
 72
 73
               end
 74
           end
 75
 76
         # Tests for preventing a plane docking if airport full
 77
         context "Traffic Control gives permission for landing pending on capacity" do
             it "stops a plane for landing/docking if airport is full"do
  78
 79
               allow(airport).to receive(:stormy?).and_return(false)
               5.times{airport.dock(Plane.new)}
 80
               expect {airport.dock(Plane.new)}.to raise_error "Airport is full, cannot land"
 81
 82
 83
             it "a plane cannot launch if there are no planes in airport"do
 84
               allow(airport).to receive(:stormy?).and_return(false)
 85
               expect {airport.launch(Plane.new)}.to raise_error "There are no planes in the airport"
 86
 87
             end
 88
         end
 89
 90
       end
```

```
makersacademy / airport_challenge
                    airport_challenge / spec / bonus_airport_spec.rb
 Tree: 25424c6706 ▼
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 Fetching contributors...
 Cannot retrieve contributors at this time
 114 lines (93 sloc) | 4.07 KB
         require "airport"
    2
         require "plane"
    3
         require "hand_of_god"
    4
    5
         describe Airport do
           # Name the subject explicitly
    6
    7
               subject(:airport) {described_class.new}
    8
    9
           # Define Doubles
   10
   11
           # Test for initializing an airport
           context "Airport initialization can work both with arguments and without" do
   12
   13
             it "accepts a capacity argument, if not capacity defaults to DEFAULT_CAPACITY" do
   14
                  expect{Airport.new(30)}.not_to raise_error
                  expect{Airport.new}.not_to raise_error
   15
   16
                  expect(subject.airp_capacity).to eq Airport::CAPACITY
   17
            end
   18
           end
   19
   20
           # Tests for Airport responding to methods
           context "Airport responds to various methods" do
   21
   22
                it "plane can land" do
   23
                  expect(subject).to respond_to (:dock)
   24
                end
   25
   26
                it "plane can take off" do
   27
                  expect(subject).to respond_to (:launch)
   28
                end
   29
                it "airport logs how many planes are docked" do
   30
   31
                  expect(subject).to respond_to (:count_of_planes)
   32
                end
   33
            end
   34
   35
           # Test for docking and launching a plane and checking
   36
           # how many planes are in the airport at any given time
   37
           context "Airport is docking & launching planes" do
   38
            # Set stormy? to be false for tests of just docking & launching planes
   39
               before (:each) do allow(airport).to receive(:stormy?).and_return(false) end
               it " - a plane lands" do
   40
                  # airport = Airport.new --- Omitted as we have used subject(:airport) {described_class.new}
   41
   42
                  plane = Plane.new
                  airport.dock(plane)
   43
                  expect(airport.count_of_planes).to eq 1
   44
   45
                end
   46
                it " - a plane takes off" do
   47
                  # airport = Airport.new --- Omitted as we have used subject(:airport) {described_class.new}
   48
                  plane = Plane.new
   49
                  airport.dock(plane)
   50
                  airport.launch(plane)
   51
   52
                  expect(airport.count_of_planes).to eq 0
   53
                end
   54
            end
   55
   56
            # Tests for preventing a plane launching if weather is stormy
   57
             context "Weather conditions are affecting docking & launching" do
   58
   59
                 it "stops a plane from launching if stormy" do
                 # We need to temporarily set stormy to false, so we can dock a plane
   60
                 allow(airport).to receive(:stormy?).and_return(false)
   61
                 plane = Plane.new
   62
                 airport.dock(plane)
   63
                 # We set stormy to true, so we can run our test
   64
                 allow(airport).to receive(:stormy?).and_return(true)
   65
                 expect{airport.launch(plane)}.to raise_error "Weather Stormy!! Planes are Grounded"
   66
   67
                 end
   68
                 it "stops a plane from docking if stormy" do
   69
                 allow(airport).to receive(:stormy?).and_return(true)
   70
   71
                 plane = Plane.new
                 expect {airport.dock(plane)}.to raise_error "Weather Stormy!! Planes cannot land/dock"
   72
   73
                 end
   74
            end
   75
   76
           # Tests for preventing a plane docking if airport full
   77
           context "Traffic Control gives permission for landing pending on capacity" do
               it "stops a plane for landing/docking if airport is full"do
   78
   79
                 allow(airport).to receive(:stormy?).and_return(false)
                 5.times{airport.dock(Plane.new)}
   80
                 expect {airport.dock(Plane.new)}.to raise_error "Airport is full, cannot land"
   81
   82
   83
               it "a plane cannot launch if there are no planes in airport"do
   84
```

```
85
              allow(airport).to receive(:stormy?).and_return(false)
 86
              expect {airport.launch(Plane.new)}.to raise_error "There are no planes in the airport"
 87
            end
 88
        end
 89
 90
 91
        # Test for landing many planes
        context "Land a number of planes equal to default capacity (5) and then get them to take off" do
 92
          it "Dock all the planes prior and get them ready to take off" do
 93
 94
            allow(airport).to receive(:stormy?).and_return(false)
 95
            airport.airp_capacity.times { airport.dock(Plane.new)}
            expect(subject.count_of_planes).to eq airport.airp_capacity
 96
 97
          end
 98
          it "All planes are taking off" do
 99
100
            allow(airport).to receive(:stormy?).and_return(false)
            airport.airp_capacity.times { airport.dock(Plane.new)}
101
            # We need to use the until as each time the each runs, it alters the array is it running on
102
            until airport.planes.empty?
103
                  airport.planes.each{|plane| airport.launch(plane)}
104
            end
105
            expect(subject.count_of_planes).to eq 0
106
107
          end
108
109
110
111
        end
112
113
      end
```

Tree: 25424c6706 - airport\_challenge / spec / plane\_spec.rb

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```
39 lines (30 sloc) | 1.02 KB
  1
       require "plane"
  2
   3
       describe Plane do
  4
         subject(:plane) {described_class.new}
  5
  6
         context "When a plane is created it is not flying" do
  7
             it "is not flying" do
  8
               expect(subject.flying).to eq false
  9
             end
  10
         end
  11
  12
         context "Changing flying attributes when landing/taking off" do
  13
             it "when docking, its flying attribute changes to false" do
  14
               plane.flying = true
               plane.landing
  15
  16
               expect(plane.flying).to eq false
  17
             end
  18
  19
             it "when launching, its flying attribute changes to true" do
  20
  21
               plane.flying
  22
               plane.taking_off
  23
               expect(plane.flying).to eq true
  24
             end
  25
           end
  26
  27
           context "Plane in flight cannot be launched / Plane docked cannot be docked" do
  28
             it "when a plane is flying, it cannot be launched" do
  29
               plane.taking_off
  30
               expect{plane.taking_off}.to raise_error "Plane is already in the air"
  31
             end
  32
  33
             it "when a plane is docked, it cannot be docked again" do
               expect{plane.landing}.to raise_error "Plane is already docked"
  34
  35
             end
           end
  36
  37
  38
       end
```