Ruby Assessment 2 Practice › rbhatia@appacademy.io

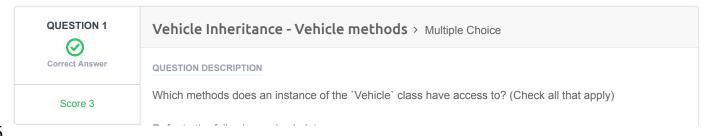|	
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Test Name:	**Ruby Assessment 2 Practice**
Taken On:	13 Sep 2019 16:00:07 PDT
Time Taken:	5 min 54 sec/ 80 min
Invited by:	Ronil Bhatia
Tags Score:	

100%

54/54

scored in **Ruby Assessment 2 Practice** in 5 min 54 sec on 13 Sep 2019 16:00:07 PDT

Recruiter/Team Comments:

No Comments.

	Question Description	Time Taken	Score	Status
Q1	**Vehicle Inheritance - Vehicle methods** › **Multiple Choice**	21 sec	3/ 3	⊘
Q2	**Vehicle Inheritance - Car methods** › **Multiple Choice**	37 sec	3/ 3	⊘
Q3	**Vehicle Inheritance - Train Methods** › **Multiple Choice**	13 sec	3/ 3	⊘
Q4	**Vehicle Inheritance - Sedan Methods** › **Multiple Choice**	11 sec	3/ 3	⊘
Q5	**Vehicle Inheritance - Prediction** › **Multiple Choice**	5 sec	3/ 3	⊘
Q6	**Big O - Analysis 1** › **Multiple Choice**	38 sec	3/ 3	⊘
Q7	**Big O - Analysis 2** › **Multiple Choice**	5 sec	3/ 3	⊘
Q8	**Big O - Analysis 3** › **Multiple Choice**	3 sec	3/ 3	⊘
Q9	**Big O - Analysis 4** › **Multiple Choice**	2 sec	3/ 3	⊘
Q10	**CSS** › **Front-end**	1 min 53 sec	15/ 15	⊘
Q11	**Short Answer - Private vs Protected Methods** › **Subjective**	38 sec	6/ 6	⊖
Q12	**Short Answer - Set vs Array Data Structure** › **Subjective**	59 sec	6/ 6	⊖

QUESTION 1

✓

Correct Answer

Score 3

Vehicle Inheritance - Vehicle methods › Multiple Choice

QUESTION DESCRIPTION

Which methods does an instance of the `Vehicle` class have access to? (Check all that apply)

```ruby
class Vehicle
    attr_accessor :speed

    def initialize(speed)
        @speed = speed
    end

    def accelerate(amount)
        self.speed += amount
    end

    def stop
        self.speed = 0
    end
end

class Car < Vehicle
    attr_accessor :location

    def initialize(location, speed)
        super(speed)
        @location = location
    end

    def travel
        self.location += speed
    end
end

class Train < Vehicle
    attr_accessor :route, :station

    def initialize(route, station, speed)
        super(speed)
        @route = route
    end

    def travel
        self.station = station.next
    end

    def switch_route(new_route)
        self.route = new_route
    end
end

class SportsCar < Car
    def travel
        self.location += speed
        puts "VROOM!"
    end
end

class Sedan < Car
    attr_reader :trunk

    def initialize(location, speed)
        super(location, speed)
        @trunk = []
    end

    def load(item)
        trunk.push(item)
    end
end
```

CANDIDATE ANSWER

Options: (Expected answer indicated with a tick)

- ✅ 🔘 initialize
- ✅ 🔘 speed
- ⚪ location
- ⚪ trunk
- ⚪ route
- ⚪ station
- ✅ 🔘 accelerate
- ✅ 🔘 stop
- ⚪ travel
- ⚪ load
- ⚪ switch_route
- ✅ 🔘 speed=

No Comments

Vehicle Inheritance - Car methods › Multiple Choice

QUESTION DESCRIPTION

Which methods does an instance of the `Car` class have access to? (Check all that apply)

Refer to the following code skeleton (note that this code is identical to the previous question):

```ruby
class Vehicle
    attr_accessor :speed

    def initialize(speed)
        @speed = speed
    end

    def accelerate(amount)
        self.speed += amount
    end

    def stop
        self.speed = 0
    end
end

class Car < Vehicle
    attr_accessor :location

    def initialize(location, speed)
        super(speed)
        @location = location
    end

    def travel
        self.location += speed
    end
end

class Train < Vehicle
    attr_accessor :route, :station
```

```
    attr_accessor :route, :station

    def initialize(route, station, speed)
        super(speed)
        @route = route
    end

    def travel
        self.station = station.next
    end

    def switch_route(new_route)
        self.route = new_route
    end
end

class SportsCar < Car
    def travel
        self.location += speed
        puts "VROOM!"
    end
end

class Sedan < Car
    attr_reader :trunk

    def initialize(location, speed)
        super(location, speed)
        @trunk = []
    end

    def load(item)
        trunk.push(item)
    end
end
```

CANDIDATE ANSWER

Options: (Expected answer indicated with a tick)

- ✅ ⦿ initialize
- ✅ ⦿ speed
- ✅ ⦿ location
- ◯ trunk
- ◯ route
- ◯ station
- ✅ ⦿ accelerate
- ✅ ⦿ stop
- ✅ ⦿ travel
- ◯ load
- ✅ ⦿ speed=

No Comments

QUESTION 3
✅
Correct Answer

Vehicle Inheritance - Train Methods › Multiple Choice

QUESTION DESCRIPTION

Which methods does an instance of the `Train` class have access to? (Check all that apply)

Refer to the following code skeleton (note that this code is identical to the previous question):

```ruby
class Vehicle
    attr_accessor :speed

    def initialize(speed)
        @speed = speed
    end

    def accelerate(amount)
        self.speed += amount
    end

    def stop
        self.speed = 0
    end
end

class Car < Vehicle
    attr_accessor :location

    def initialize(location, speed)
        super(speed)
        @location = location
    end

    def travel
        self.location += speed
    end
end

class Train < Vehicle
    attr_accessor :route, :station

    def initialize(route, station, speed)
        super(speed)
        @route = route
    end

    def travel
        self.station = station.next
    end

    def switch_route(new_route)
        self.route = new_route
    end
end

class SportsCar < Car
    def travel
        self.location += speed
        puts "VROOM!"
    end
end

class Sedan < Car
    attr_reader :trunk

    def initialize(location, speed)
        super(location, speed)
        @trunk = []
    end

    def load(item)
        trunk.push(item)
    end
end
```

CANDIDATE ANSWER

Options: (Expected answer indicated with a tick)

- ✅ ⦿ initialize
- ✅ ⦿ speed
- ◯ location
- ◯ trunk
- ✅ ⦿ route
- ✅ ⦿ station
- ✅ ⦿ accelerate
- ✅ ⦿ stop
- ✅ ⦿ travel
- ◯ load
- ✅ ⦿ switch_route

No Comments

QUESTION 4

✅

Correct Answer

Score 3

Vehicle Inheritance - Sedan Methods > Multiple Choice

QUESTION DESCRIPTION

Which methods does an instance of the `Sedan` class have access to? (Check all that apply)

Refer to the following code skeleton (note that this code is identical to the previous question):

```
class Vehicle
    attr_accessor :speed

    def initialize(speed)
        @speed = speed
    end

    def accelerate(amount)
        self.speed += amount
    end

    def stop
        self.speed = 0
    end
end

class Car < Vehicle
    attr_accessor :location

    def initialize(location, speed)
        super(speed)
        @location = location
    end

    def travel
        self.location += speed
    end
end

class Train < Vehicle
```

```
        attr_accessor :route, :station

        def initialize(route, station, speed)
            super(speed)
            @route = route
        end

        def travel
            self.station = station.next
        end

        def switch_route(new_route)
            self.route = new_route
        end
    end

    class SportsCar < Car
        def travel
            self.location += speed
            puts "VROOM!"
        end
    end

    class Sedan < Car
        attr_reader :trunk

        def initialize(location, speed)
            super(location, speed)
            @trunk = []
        end

        def load(item)
            trunk.push(item)
        end
    end
```

CANDIDATE ANSWER

Options: (Expected answer indicated with a tick)

- ✓ ⦿ initialize
- ✓ ⦿ speed
- ✓ ⦿ location
- ✓ ⦿ trunk
- ◯ route
- ◯ station
- ✓ ⦿ accelerate
- ✓ ⦿ stop
- ✓ ⦿ travel
- ✓ ⦿ load
- ◯ switch_route

No Comments

✓

Vehicle Inheritance - Prediction › Multiple Choice

QUESTION DESCRIPTION

Consider the following code skeleton (note that this code is identical to the previous question):

```ruby
class Vehicle
    attr_accessor :speed

    def initialize(speed)
        @speed = speed
    end

    def accelerate(amount)
        self.speed += amount
    end

    def stop
        self.speed = 0
    end
end

class Car < Vehicle
    attr_accessor :location

    def initialize(location, speed)
        super(speed)
        @location = location
    end

    def travel
        self.location += speed
    end
end

class Train < Vehicle
    attr_accessor :route, :station

    def initialize(route, station, speed)
        super(speed)
        @route = route
    end

    def travel
        self.station = station.next
    end

    def switch_route(new_route)
        self.route = new_route
    end
end

class SportsCar < Car
    def travel
        self.location += speed
        puts "VROOM!"
    end
end

class Sedan < Car
    attr_reader :trunk

    def initialize(location, speed)
        super(location, speed)
        @trunk = []
    end

    def load(item)
        trunk.push(item)
    end
end
```

What would the following code output?

```
sporty = SportsCar.new(0, 80)
sporty.travel
```

CANDIDATE ANSWER

Options: (Expected answer indicated with a tick)

- ( ) No output
- ✓ (●) "VROOM!"
- ( ) 80
- ( ) 0

No Comments

QUESTION 6

✓

Correct Answer

Score 3

Big O - Analysis 1 > Multiple Choice

QUESTION DESCRIPTION

Which time complexity best describes the code below?

```
def foo(array)
    slice = array[0..array.length / 3]
    slice.each do |el|
        puts el
    end
end
```

Assume that n is the length of the array.

CANDIDATE ANSWER

Options: (Expected answer indicated with a tick)

- ✓ (●) O(n)
- ( ) O(1)
- ( ) O(n^2)
- ( ) O(n^3)

No Comments

Big O - Analysis 2 › Multiple Choice

QUESTION DESCRIPTION

Which time complexity best describes the code below?

```
def foo(n)
    while n >= 1
        puts n
        n = n / 2
    end
end
```

CANDIDATE ANSWER

Options: (Expected answer indicated with a tick)

- ◯ O(n)
- ◯ O(n^2)
- ✅ ⦿ O(log(n))
- ◯ O(1)

No Comments

Big O - Analysis 3 › Multiple Choice

QUESTION DESCRIPTION

Which time complexity best describes the code below?

```
def foo(array)
    triplets = []
    array.each do |el1|
        array.each do |el2|
            array.each do |el3|
                triplets << [ el1, el2, el3  ]
            end
        end
    end
end
```

Assume n is the length of the array

CANDIDATE ANSWER

Options: (Expected answer indicated with a tick)

○ O(n^2)

○ O(n)

✓ ● O(n^3)

○ O(3^n)

No Comments

Big O - Analysis 4 > Multiple Choice

QUESTION DESCRIPTION

Which time complexity best describes the code below?

```
def foo(n)
    2.times do
        n.times do
            puts "hello"
        end
    end
end
```

CANDIDATE ANSWER

Options: (Expected answer indicated with a tick)

○ O(1)

○ O(log(n))

✓ ● O(n)

○ O(2^n)

No Comments

CSS > Front-end

QUESTION DESCRIPTION

An html skeleton is provided. Apply the following styles:

1. Give a font-size of 15px to all li elements
2. Give a blue background to the element with an id of "list-header"
3. Give red text to all elements with the class of "ruby"
4. Give a yellow background to **only** the span elements that are inside li elements
5. Give the image a height of 50px

Three points awarded are awarded for satisfying each instruction, for a maximum of 15 points.

You may not edit the html skeleton.

INTERNAL NOTES

Scoring

3 points awarded for satisfying each instruction, for a maximum of 15 points

CANDIDATE ANSWER

Please open the report on HackerRank for Work to view the candidate's submission

https://www.hackerrank.com/x/tests/545669/candidates/10941557/report

No Comments

Short Answer - Private vs Protected Methods › Subjective

QUESTION DESCRIPTION

What is a difference between 'private' and 'protected' methods?

Your response must be one or more complete sentences.

INTERNAL NOTES

Scoring
Full Credit: response fully identifies a difference
Half Credit: response only partially identifies a difference

Possible full credit responses:

- ~~Private methods cannot be called with an explicit receiver while protected methods may be called with an explicit receiver.~~ Private methods can only be called on 'self', while protected methods may be called on self and other instances of the same class or an inheriting class.

Half credit examples:

- A difference between private and protected methods are their receivers.

CANDIDATE ANSWER

While both private and protected methods are only accessible from within instance methods, private methods ~~cannot have an explicit receiver and therefore~~ may only ever be called on `self`, whereas protected methods can have an explicit receiver and may be called on other instances of the same class, or an instance of a class that inherits from the class in which the protected method is defined. Both private and protected methods are inherited by child classes.

No Comments

Short Answer - Set vs Array Data Structure > Subjective

QUESTION DESCRIPTION

Which data structure would be the more preferable to keep track of visited nodes when implementing BFS on a graph: a Set or an Array? Explain your answer.

Your response must be one or more complete sentences.

INTERNAL NOTES

Scoring
Full Credit: response identifies answer with valid explanation
Half Credit: response identifies answer without valid explanation

Answer: Set is preferable
Explanation: Set has constant time O(1) lookup, compared to Arrays linear O(n) lookup.

CANDIDATE ANSWER

A Set as it has O(1) lookup time whereas an Array has O(n) lookup time. We have to do this check every time we check if we've already visited a node so O(1) lookup will be much more efficient than doing an O(n) lookup every time.

No Comments

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