

GEDİZUNIVERSITY

Computer Engineering Department

COM401 (Fall-2014)
Software Engineering
Laboratory

HOMEWORK1 –

SAMPLE SOLUTION :

1- You can solve this question in many ways in Ruby. One way is using iterators like upto or downto. The first code is written by using upto iterator.

```
=begin
  This script contains a method to calculate factorial of a number given
  as parameter

  Author : your TA
  Date : Oct. 30, 2014
=end

def factorial(n)
  #initialize a fact variable
  fact = 1;

  # use upto iterator
  1.upto(n) do |i|
    fact*=i
  end

  return fact
end

# call the method
puts factorial(6)
```

Similarly to upto, the code below is written by using downto.

```
def factorial(n)
  #initialize a fact variable
  fact = 1;

  # use upto iterator
  n.downto(1) do |i|
    fact*=i
  end

  return fact
end

puts factorial(6)
```

Additionally, these solutions, you can use ranges also.

```
def factorial(n)
  (1..n).inject(:*)
end

puts factorial(6)
```

2- In this question, we are asked for a method finds minimum number between passed arguments.

```
=begin
  This program finds minimum integer in a set of integers given as
  parameter.
  Note that, in the question it is supposed that method will written
  should be able to handle different number of parameters

  Author : your TA
  Date : Oct. 30,2014
=end
```

```
def find_min(*numbers)

  sorted_arr = *numbers.sort
  return sorted_arr.at(0)
end

puts find_min("2")
puts find_min("-3", "0")
puts find_min("12","74", "0","147","16","7", "-5")
```

3- In this question, we are asked to write a Ruby script that takes a day from keyboard and display an appropriate message for each acceptable day entry.

```
=begin
  This program reads a day from keyboard then prints out a message about
  the day.

  Author : your TA
  Date : Nov. 9,2014
=end

day = gets #read from keyboard

message = case day.downcase
  when "monday","tuesday","wednesday","thursday","friday"
    then "it is weekday"
  when 'saturday'    then "it is weekend"
  when "sunday"     then "Cheer up, this day is Sunday!"
  else "This is not a day!"
end

puts message
```

4- In this question, we are expected to create and use a Hash for our project team and project title information.

```
=begin
  This program returns the title of the project for the number of team
  specified for the data given as a table
  in the Q4 for Hmw1.

  Author : your TA
  Date : Nov. 9,2014
=end

def project_title(team_id)
  projects = {}      #create a hash
  #add the keys and values
  projects[1] = "Development of a Big Data Ecosystem for Social Network
Data Analytics"
  projects[2] = "An Auction Based Virtual Machine Instance Allocation
Software for Cloud Computing Environments"
  projects[3] = "Early warning and control system for safety transportation
of heavy vehicles"
  projects[4] = "Game: Shooting the Targets"
  projects[5] = "Simulation of a trading eco-system with smart(learning)
agents"
  projects[6] = "Camera Zoom/Tilt/Pan Detection for Computer Vision
Applications"
  projects[7] = "Volume Based Elevator Occupation Warning System with
Camera and Depth Sensor Integration"
  projects[8] = "Development of Ordering, Shipping and Delivery Management
System for Industrial Companies"
  projects[9] = "Gediz University Industrial Training Management System"
  projects[10]= "Where is my service bus?"

  #look for the team_id specified
  if projects.has_key?(team_id)      #is there such a key inside of the
projects?
    projects.each do |key,value|      #if yes
      if key == team_id
        puts "Team#{key}'s project title is \" #{value} \" "
      end
    end
  else                                  #if no
    puts "It is not appropriate id!"      #put a message
  end
end

end

puts "Enter the number of the team:"
id = gets
project_title(id.to_i)
```

5- In this program, we are supposed to create a quotes pool, then display a quote among them for each run.

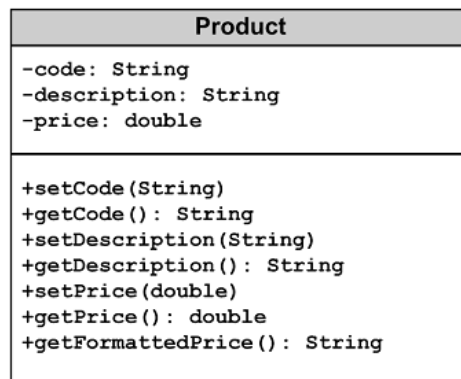
```
=begin
  This program returns a quote from the quotes pool for each run
  in the Q5 for Hmw1.

  Author : your TA
  Date : Nov. 9,2014
=end

quotes = Array["Moral indignation is jealousy with a halo.", "Glory is
fleeting, but obscurity is forever." <<
"The whole problem with the world is that fools and fanatics are always so
certain of themselves, and wiser people so full of doubts." <<
"Victory goes to the player who makes the next-to-last mistake." <<
"Don't be so humble - you are not that great." <<
"His ignorance is encyclopedic" <<
"If a man does his best, what else is there?" <<
"You can avoid reality, but you cannot avoid the consequences of avoiding
reality." <<
"I can write better than anybody who can write faster, and I can write
faster than anybody who can write better." <<
"People demand freedom of speech to make up for the freedom of thought
which they avoid." <<
"Give me chastity and continence, but not yet." <<
"Not everything that can be counted counts, and not everything that counts
can be counted." <<
"Only two things are infinite, the universe and human stupidity, and I'm
not sure about the former." <<
"The full use of your powers along lines of excellence." <<
"Each problem that I solved became a rule which served afterwards to solve
other problems."

r = Random.new
quote_index = r.rand(0..14)
puts quotes[quote_index]
```

6- In this question, we are asked implementation of the Product class whose UML diagram is given below.



```
=begin
  This program demonstrates Product type
  in the Q6 for Hmw1.

  Author : your TA
  Date : Nov. 9,2014
=end
class Product
  def set_code=(val)
    @code = val
  end
  def get_code
    @code
  end
  def set_description=(val)
    @description = val
  end
  def get_description
    @description
  end
  def set_price=(val)
    @price = val
  end
  def get_price
    @price
  end
  def get_formatted_price
    @price.to_s + " TL"
  end
end

product = Product.new
product.set_code = "PNC123456"
product.set_description = "Pencil Black Colored"
product.set_price= 7.5

puts "Product Code : #{product.get_code}"
puts "Product Description : #{product.get_description}"
puts "Product Price : #{product.get_price}"
puts "Product Formatted Price : #{product.get_formatted_price}"
```

"On my honor I have neither given nor received unauthorized information regarding this work, and I am unaware of any violation of the Honor Code by others."