

**GEDİZ**UNIVERSITY

Computer Engineering Department

COM401  
Software Engineering  
Laboratory



October 14, 2014

**LAB-1:**

Introduction to Ruby

**Time:** 2 lab hours

**Objectives:**

Learn

- Some naming conventions
- Generating random numbers
- Scope of variables
- Simple Time and date
- Conditionals
- Iterators
- Arrays
- Hashes
- Classes

Learn how to

- Comment ruby codes
- Define and use variables and constants in Ruby
- Getting a value from keyboard , put some values on screen
- Defining and using methods

**Lab Outcomes:**

Practice with RubyMine IDE and Ruby.

**Exercises :**

- 1- Write a Ruby script that makes mathematical operations like add, sub, multiply, divide, taking exponent, taking mod, converting the number into the String and print out to screen.
- 2- Write a Ruby script identifying type of a variable (*kind\_of? method*)
- 3- Write a Ruby script converting a float value to String, a decimal number to binary, octal and hexadecimal numbers. (*.to\_f, .to\_s, .to\_s(2), .to\_s(8), .to\_s(16)*)
- 4- Write a Ruby script that shows the scope of variable x. (*defined?* )
- 5- Write a Ruby method that sums two integers passed to the method.
- 6- Write a Ruby method that illustrates *Extra arguments*. You can use the following test set.  
test *2,4,6,8,10,12*
- 7- Write a Ruby script that showing case and ranges together.( Ex: grade score )
- 8- Write a Ruby script for demonstration of array operations.
  - An array of known objects can be created by enclosing them in square brackets.
  - You can use negative indexes to start from the end of the array
  - You can even use the handy "first" and "last" methods.

- Length
  - To look at contents of an object use the "inspect" method. Even more convenient is to use "p" as a shorthand for "puts obj.inspect"
  - Arrays can act like queues and sets
    - o Union (+)
    - o Intersect (&)
    - o Difference (-)
    - o Push
    - o Pop
- 9-** Write a Ruby script for combined and comparison operators ( += , .eql? , <=> , and so on)
- 10-** Write a Ruby script that illustrates flow controls in Ruby like *if, else if, ternary control*
- 11-** Write a Ruby script that illustrates iterators in Ruby like *for, loop, while, times, each, upto*
- 12-** Write a Ruby script that demonstrate some Math functions like *sqrt* and *exp*
- 13-** Write a Ruby script that prints the actual date and time.
- 14-** Write a Ruby script that generates a random number and prints it.
- 15-** Write a Ruby script that creates a dictionary for 3 chemical elements to show hashes in Ruby.
- 16-** Write a Ruby class named "BankAccount" and has three attributes: account number, the name of holder. Please do not forget to write accessor and mutator methods( like getters and setters in Java).