THE ISLAMIC UNIVERSITY – FACULTY OF ENGINEERING
ELECTRICAL ENGINEERING DEPARTMENT
INTRODUCTION TO COMPUTER LAB

LAB# 3

Variable and Data Type II

BY

Ehsan Ahmed Barbakh 220150871

Submitted for

Eng. Mai

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Exercises:

1. Write a Python program that compute the area of a circle given the radius entered
by the user.

```
1  import math
2  raduis= input("Enter the raduis")
3  Area=(raduis*raduis)*(math.pi)
4  print "The Area of circule ",Area,"For raduis ", raduis
5
```

```
test  test  test  test
C:\Python27\python.exe "C:/Users/Mohammed/PycharmProjects/first project/te
Enter the raduis2
The Area of circule  12.5663706144 For raduis  2


Process finished with exit code 0
```

2. Write a Python program to solve quadratic equations of the form
$ax2 + bx + c = 0$
Where the coefficients a, b, and c are real numbers taken from user. The two real number solutions are derived by the formula $x = -b \pm \sqrt{b2-4ac}$
$2a$
For this exercise, you may assume that a ≠ 0 and $b2 > 4ac$.

```
import math
print "the programe to solve this equation ax^2+bx+c=0"
a=input("Enter a coefficient")
b=input("Enter b coefficient")
c=input("Enter c coefficient")
r=(b*b)-(4*a*c)
v=math.sqrt(r)
x1=(-b+v)/(2*a)
x2=(-b-v)/(2*a)

print "The First Solution " , x1 ,"*******","The Second Solution" , x2
```

```
test  test  test  test  test  test
C:\Python27\python.exe "C:/Users/Mohammed/PycharmProjects/first project/test.py"
the programe to solve this equation ax^2+bx+c=0
Enter a coefficient1
Enter b coefficient5
Enter c coefficient2
The First Solution  -0.438447187191 ******* The Second Solution -4.56155281281


Process finished with exit code 0
```

3. **Write a program that define dictionary will save the following information entered**
by
the user and then use it to print a payroll statement as the following example:
Employee's name (e.g., mai)
Number of hours worked in a week (e.g., 13)
Hourly pay rate (e.g., 6.75)
Municipality tax rate (e.g., 20%)
Country tax rate (e.g., 8%)

```
emp=input("Enter employee's name:")
numofho=input("Enter number of hours worked in a week:")
hourlyrate=input("Enter hourly pay rate:")
totalpay=numofho*hourlyrate
municipalityrate=input("Enter municipality tax rate:")
countryrate=input("Enter country tax rate:")
municipalitytax=(municipalityrate/100)*totalpay
countrytax=(countryrate/100)*totalpay
totalDeductions=countrytax+municipalitytax
netpay=totalpay-totalDeductions
print"================================================"
employee={"employ name":emp, "Hours worked:":numofho, "pay rate":hourlyrate,"total pay":totalpay,
          "Municipality":municipalitytax,"country":countrytax,"Total":totalDeductions,"Net pay":netpay}

print "Employ Name :",employee["employ name"]
print "Hours Work :",employee["Hours worked:"]
print "pay rate : ",employee["pay rate"]
print "Total Pay:",employee["total pay"]
print "Deductions"
print "       Municipality tax (%20.00): ",employee[ "Municipality"]
print "       country tax (%8.00): ",employee["country"]
print "       Total Deduction : ",employee["Total"]
print "Net pay:",employee["Net pay"]
```

```
Enter employee's name: "Ehsan"
Enter number of hours worked in a week:14
Enter hourly pay rate:6
Enter municipality tax rate:20
Enter country tax rate:8
================================================
Employ Name : Ehsan
Hours Work : 14
pay rate :  6
Total Pay: 84
Deductions
        Municipality tax (%20.00):  0
        country tax (%8.00):  0
        Total Deduction :  0
Net pay: 84

Process finished with exit code 0
```