

EC606PC: SCRIPTING LANGUAGES LAB MANUAL

Prepared by:

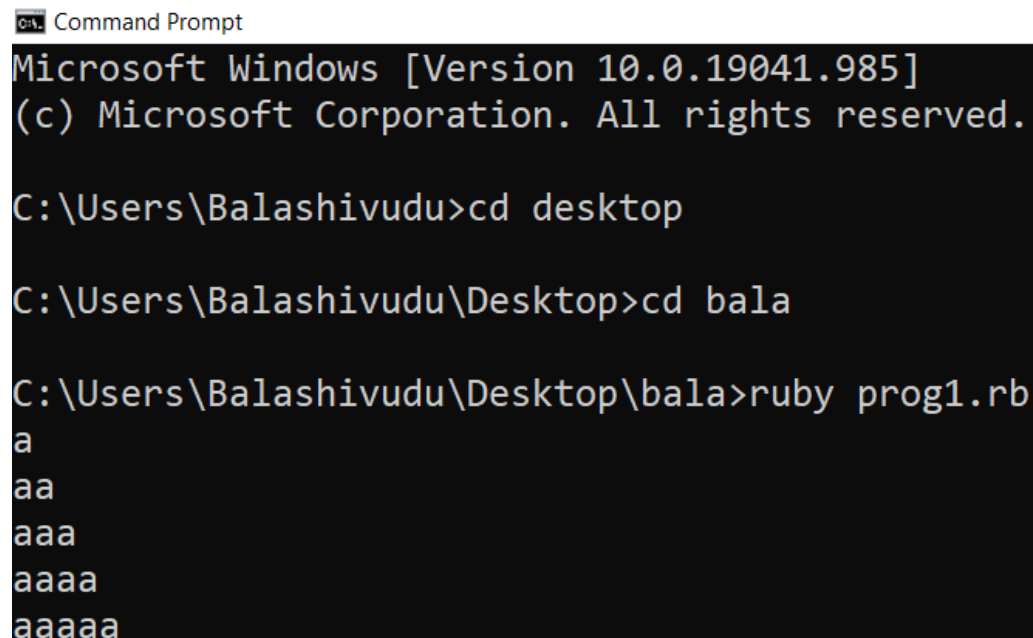
Dr. M. Shoban, Associate Professor, NRCM.

#1 Write a Ruby program to create a new string which is n copies of a given string where n is a non-negative integer.

Ruby Code:

```
def multiple_string(str, n)
  return str*nend
print multiple_string('a', 1), "\n"
print multiple_string('a', 2), "\n"
print multiple_string('a', 3), "\n"
print multiple_string('a', 4), "\n"
print multiple_string('a', 5), "\n"
```

Output:



```
Command Prompt
Microsoft Windows [Version 10.0.19041.985]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Balashivudu>cd desktop

C:\Users\Balashivudu\Desktop>cd bala

C:\Users\Balashivudu\Desktop\bala>ruby prog1.rb
a
aa
aaa
aaaa
aaaaa
```

#2 Write a Ruby script which accepts the radius of a circle from the user and compute the perimeter and area.

Ruby Code:

```
radius = 5.0

perimeter = 0.0

area = 0.0

print "Input the radius of the circle: "

radius = gets.to_f

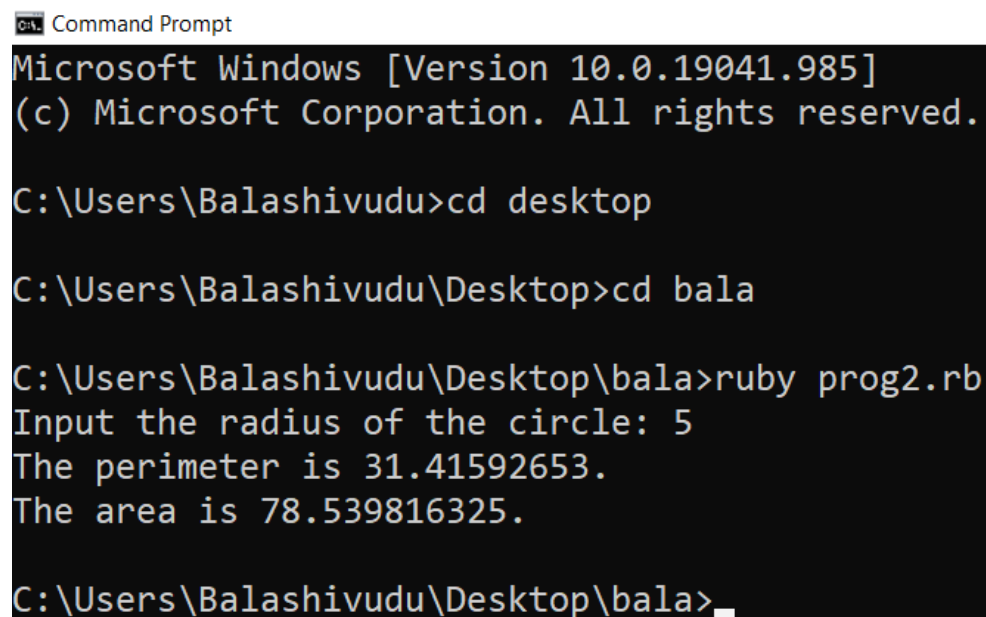
perimeter = 2 * 3.141592653 * radius

area = 3.141592653 * radius * radius

puts "The perimeter is #{perimeter}."

puts "The area is #{area}."
```

Output:



The screenshot shows a Windows Command Prompt window with the title 'C:\ Command Prompt'. The text inside the window is as follows:

```
Microsoft Windows [Version 10.0.19041.985]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Balashivudu>cd desktop

C:\Users\Balashivudu\Desktop>cd bala

C:\Users\Balashivudu\Desktop\bala>ruby prog2.rb
Input the radius of the circle: 5
The perimeter is 31.41592653.
The area is 78.539816325.

C:\Users\Balashivudu\Desktop\bala>_
```

#3. Write a Ruby program which accept the user's first and last name and print them in reverse order with a space between them.

Ruby Code:

```
puts "Input your first name: "

fname = gets

puts "Input your last name: "

lname = gets
```

```
puts "#{lname} #{fname}"
```

Output:

```
Command Prompt
Microsoft Windows [Version 10.0.19041.985]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Balashivudu>cd desktop

C:\Users\Balashivudu\Desktop>cd bala

C:\Users\Balashivudu\Desktop\bala>ruby prog3.rb
Input your first name:
Balashivudu
Input your last name:
Udutala
  Udutala
  Balashivudu

C:\Users\Balashivudu\Desktop\bala>
```

#4. Write a Ruby script to accept a filename from the user print the extension of that

```
file = "/user/system/test.rb" # file name

fbname = File.basename file

puts "File name: "+fbname # basename

bname = File.basename file, ".rb"

puts "Base name: "+bname # file extension

ffextn = File.extname file

puts "Extension: "+ffextn # path name

path_name= File.dirname file

puts "Path name: "+path_name
```

Output:

```
C:\Users\Balashivudu\Desktop\bala>ruby prog4.rb
File name: test.rb
Base name: test
Extention: .rb
Path name: /user/system

C:\Users\Balashivudu\Desktop\bala>_
```

5. Write a Ruby program to find the greatest of three numbers

Ruby Code:

```
x,y,z = 2,5,4
if x >= y and x >= z
  puts "x = #{x} is greatest."
elsif y >= z and y >= x
  puts "y = #{y} is greatest."
else
  puts "z = #{z} is greatest."
End
```

Output:

```
C:\Users\Balashivudu\Desktop\bala>ruby prog5.rb
y = 5 is greatest.

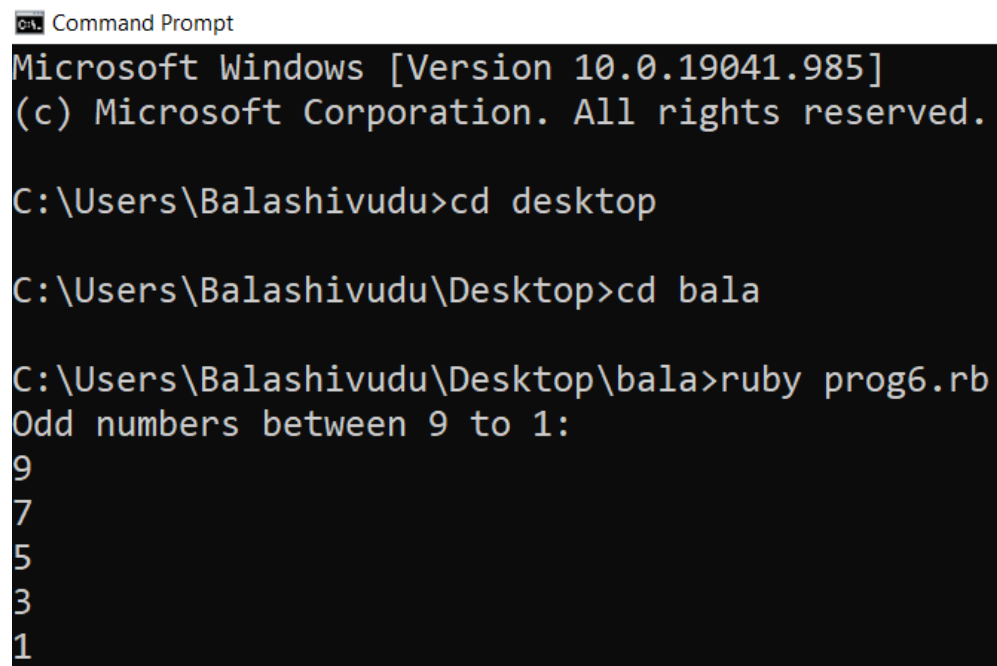
C:\Users\Balashivudu\Desktop\bala>
```

#6. Write a Ruby script to print odd numbers from 10 to 1

Ruby Code:

```
puts "Odd numbers between 9 to 1: "  
  
9.step 1, -2 do |x|  
  puts "#{x}"  
end
```

Output:



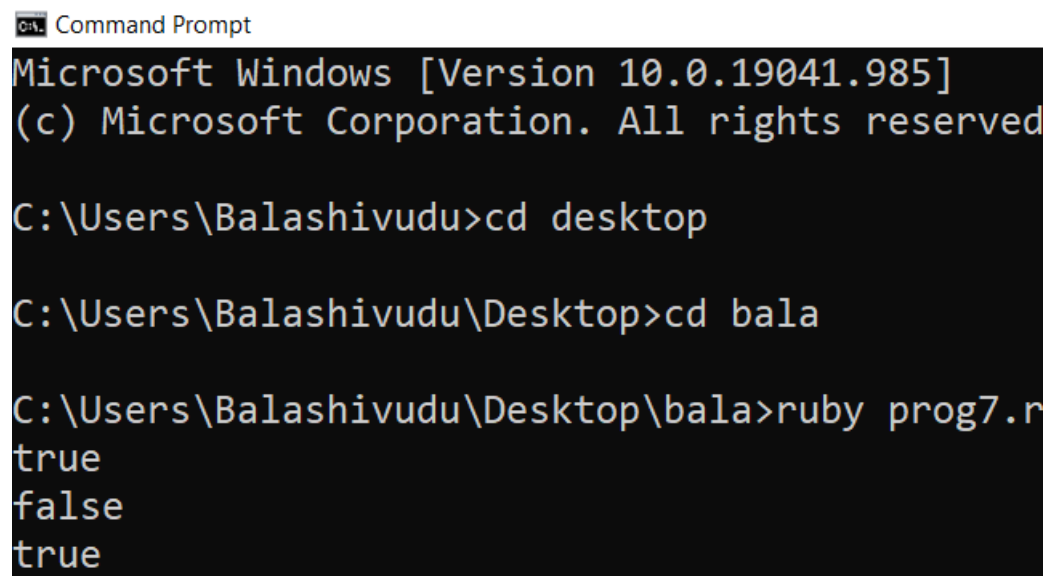
The screenshot shows a Windows Command Prompt window with the following text:

```
C:\Users\Balashivudu>cd desktop  
  
C:\Users\Balashivudu\Desktop>cd bala  
  
C:\Users\Balashivudu\Desktop\bala>ruby prog6.rb  
Odd numbers between 9 to 1:  
9  
7  
5  
3  
1
```

#7. Write a Ruby script to check two integers and return true if one of them is 20 or their sum is 20 or else return false

Ruby Code:

```
def makes20(x,y)  
  return x == 20 || y == 20 || x + y == 20  
end  
  
print makes20(10, 10),"\\n"  
print makes20(40, 10),"\\n"  
print makes20(15, 20)
```

Output:A screenshot of a Windows Command Prompt window. The title bar says "Command Prompt". The text inside shows the following commands and output:

```
Microsoft Windows [Version 10.0.19041.985]
(c) Microsoft Corporation. All rights reserved

C:\Users\Balashivudu>cd desktop

C:\Users\Balashivudu\Desktop>cd bala

C:\Users\Balashivudu\Desktop\bala>ruby prog7.r
true
false
true
```

#8. Write a Ruby program to check two temperatures and return true if one is less than 0 and the other is greater than 100.

Ruby Code:

```
def temp(temp1, temp2)
  return ( temp1 < 0 && temp2 > 100 ) || ( temp1 > 100 && temp2 < 0 );
end

print temp(110, -1),"\\n"
print temp(-1, 110),"\\n"
print temp(2, 120)
```

Output:

Command Prompt

```
Microsoft Windows [Version 10.0.19041.985]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Balashivudu>cd desktop

C:\Users\Balashivudu\Desktop>cd bala

C:\Users\Balashivudu\Desktop\bala>ruby prog8.rb
true
true
false
```

#9 Write a Ruby script to print the elements of a given array

Ruby Code:

```
array1 = ["Ruby", 2.3, Time.now]

for array_element in array1
    puts array_element
end
```

Output:

Command Prompt

```
Microsoft Windows [Version 10.0.19041.985]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Balashivudu>cd desktop

C:\Users\Balashivudu\Desktop>cd bala

C:\Users\Balashivudu\Desktop\bala>ruby prog9.rb
Ruby
2.3
2021-07-15 11:17:56 +0530
```


#10. Write a Ruby program to retrieve the total marks where subject name and marks of a student stored in a hash.

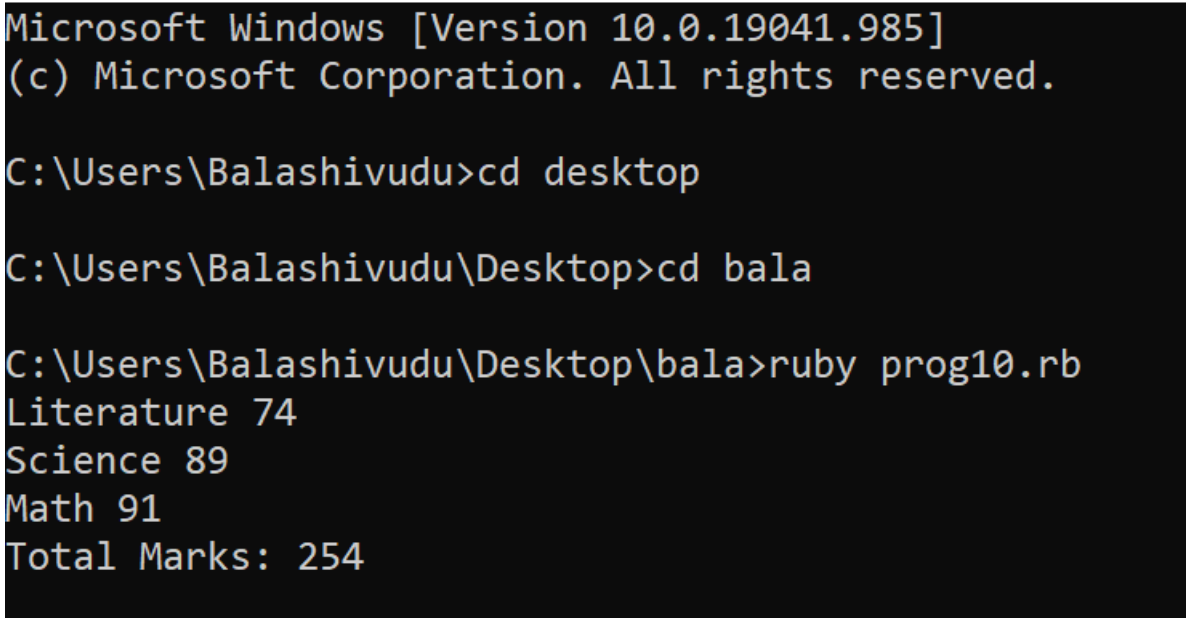
#Sample subject and marks : Literature -74, Science – 89, Math-91

Ruby Code:

```
student_marks = Hash.new 0
student_marks['Literature'] = 74
student_marks['Science'] = 89
student_marks['Math'] = 91
total_marks = 0
student_marks.each{|key,value|
    puts "#{key} #{value}"
    total_marks +=value
}
```

Output:

 Command Prompt



```
Microsoft Windows [Version 10.0.19041.985]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Balashivudu>cd desktop

C:\Users\Balashivudu\Desktop>cd bala

C:\Users\Balashivudu\Desktop\bala>ruby prog10.rb
Literature 74
Science 89
Math 91
Total Marks: 254
```

#11 Write a TCL script to find the factorial of a number

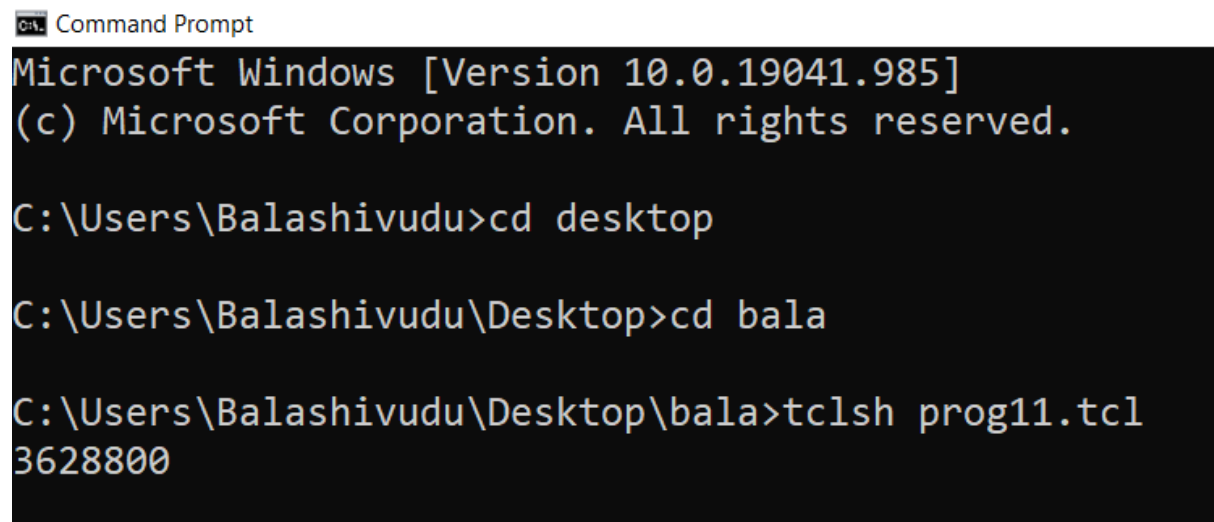
TCL Code:

```
proc Factorial {x} {
```



```
set i 1; set product 1
while {$i <= $x} {
    set product [expr $product * $i]
    incr i
}
return $product
}
puts [Factorial 10]
```

Output:

A screenshot of a Windows Command Prompt window. The title bar reads "Command Prompt". The window content shows the following text: "Microsoft Windows [Version 10.0.19041.985] (c) Microsoft Corporation. All rights reserved. C:\Users\Balashivudu>cd desktop C:\Users\Balashivudu\Desktop>cd bala C:\Users\Balashivudu\Desktop\bala>tclsh prog11.tcl 3628800".

```
Microsoft Windows [Version 10.0.19041.985]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Balashivudu>cd desktop

C:\Users\Balashivudu\Desktop>cd bala


C:\Users\Balashivudu\Desktop\bala>tclsh prog11.tcl
3628800
```

#12 Write a TCL script that multiplies the numbers from 1 to 10]

#!/usr/bin/tclsh

TCL Code:

```
set v 6
for {set n 1} {$n < 11} {incr n} {
    set res [expr {$n*$v}]
    puts $n*$v=$res
}
```

Output: Command Prompt

```
Microsoft Windows [Version 10.0.19041.985]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Balashivudu>cd desktop

C:\Users\Balashivudu\Desktop>cd bala

C:\Users\Balashivudu\Desktop\bala>tclsh prog12.tcl
1*6=6
2*6=12
3*6=18
4*6=24
5*6=30
6*6=36
7*6=42
8*6=48
9*6=54
10*6=60
```

#13. Write a TCL script for Sorting a list using a comparison function

TCL Code:

```
#!/usr/bin/tclsh

set l {2 1 3}

set intset [lsort -integer $l]

puts "integer sort $intset"

set lu {2 1 1 2 4 5 5 3}

set unq [lsort -unique $lu]

puts "unique sort $unq"

set rl {.5 0.07e1 0.4 6e-1}

set slr [lsort -real $rl]

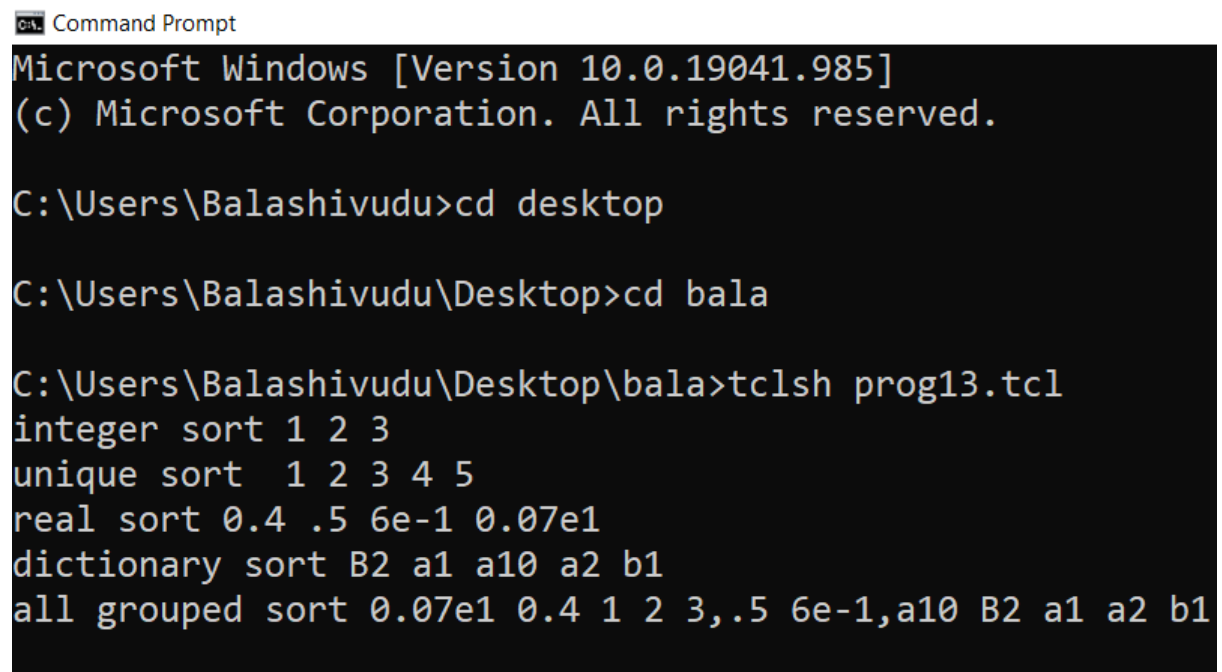
puts "real sort $slr"
```

```

set dic {a10 B2 b1 a1 a2}
set sdic [lsort $dic]
puts "dictionary sort $sdic"
set all [lsort $l,$rl,$dic]
puts "all grouped sort $all"
puts "Total Marks: "+total_marks.to_s

```

Output:



```

C:\Users\Balashivudu>cd desktop
C:\Users\Balashivudu\Desktop>cd bala
C:\Users\Balashivudu\Desktop\bala>tclsh prog13.tcl
integer sort 1 2 3
unique sort 1 2 3 4 5
real sort 0.4 .5 6e-1 0.07e1
dictionary sort B2 a1 a10 a2 b1
all grouped sort 0.07e1 0.4 1 2 3,.5 6e-1,a10 B2 a1 a2 b1

```

#14.(i) Write a TCL script to create a list

TCL Code:

```

#!/usr/bin/tclsh

set colorList1 {red green blue}; set colorList2 [list red green blue]; set colorList3 [split
"red_green_blue" _]

puts $colorList1
puts $colorList2
puts $colorList3

```

Output:

Command Prompt

```
Microsoft Windows [Version 10.0.19041.985]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Balashivudu>cd desktop

C:\Users\Balashivudu\Desktop>cd bala

C:\Users\Balashivudu\Desktop\bala>tclsh prog14(i).tcl
red green blue
red green blue
red green blue
```

14.(ii) write a TCL script to append elements to the list

TCL Code:

```
#!/usr/bin/tclsh

set var orange

append var " " "blue"

lappend var "red"

lappend var "green"

puts $var
```

Output:

Command Prompt

```
Microsoft Windows [Version 10.0.19041.985]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Balashivudu>cd desktop

C:\Users\Balashivudu\Desktop>cd bala

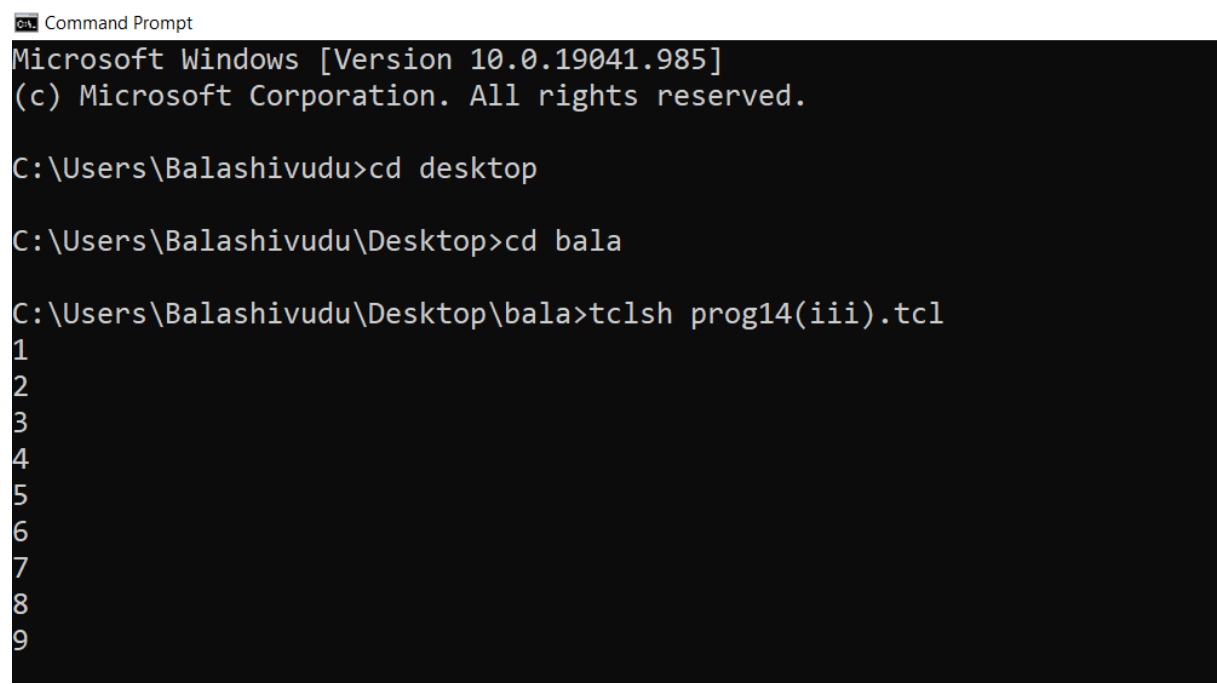
C:\Users\Balashivudu\Desktop\bala>tclsh prog14(ii).tcl
orange blue red green
```

#14.(iii) Write a TCL script to Traverse the list

TCL Code:

```
#!/usr/bin/tclsh  
foreach item {1 2 3 4 5 6 7 8 9} {  
    puts $item  
}
```

Output:



The screenshot shows a Windows Command Prompt window with the following text:

```
Command Prompt  
Microsoft Windows [Version 10.0.19041.985]  
(c) Microsoft Corporation. All rights reserved.  
  
C:\Users\Balashivudu>cd desktop  
  
C:\Users\Balashivudu\Desktop>cd bala  
  
C:\Users\Balashivudu\Desktop\bala>tclsh prog14(iii).tcl  
1  
2  
3  
4  
5  
6  
7  
8  
9
```

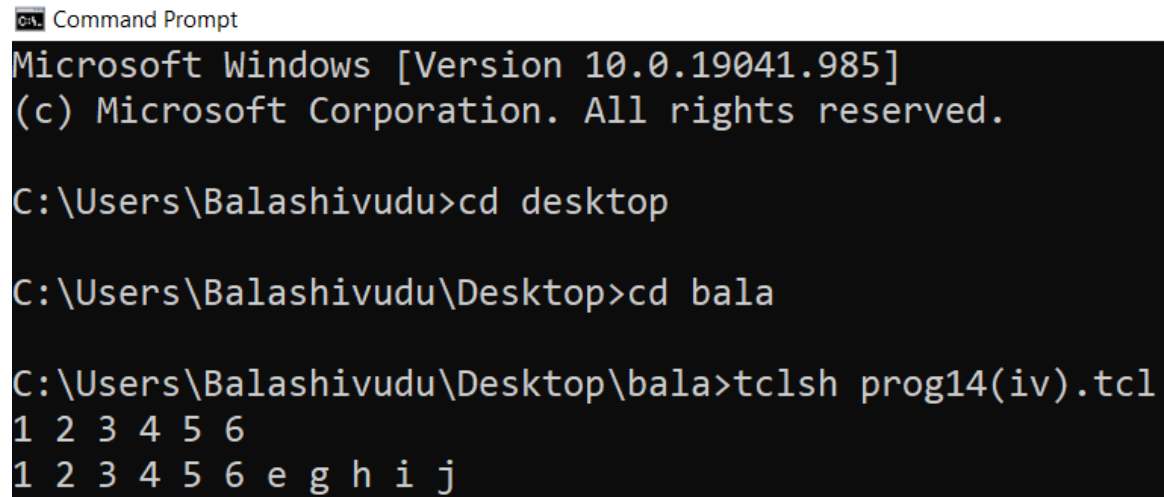
#14.(iv) Write a TCL script to Concatenate the list

TCL Code:

```
#!/usr/bin/tclsh  
set A {1 2 3}  
set B {4 5 6}  
set C {e g h i j}  
set x [concat $A $B]  
set y [concat $x $C]  
puts $x
```

puts \$y

Output:



```
C:\> Command Prompt
Microsoft Windows [Version 10.0.19041.985]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Balashivudu>cd desktop

C:\Users\Balashivudu\Desktop>cd bala

C:\Users\Balashivudu\Desktop\bala>tclsh prog14(iv).tcl
1 2 3 4 5 6
1 2 3 4 5 6 e g h i j
```

#17.a) Write a Perl script to find the largest number among three numbers

PERL Code:

```
#!/usr/bin/perl

print "enter a value";

$a=<stdin>;

print "enter b value";

$b=<stdin>;

print "enter c value";

$c=<stdin>;

if($a > $b)
{
    if($a> $c)
    {
        print " $a is largest number\n";
    }
    else
    {

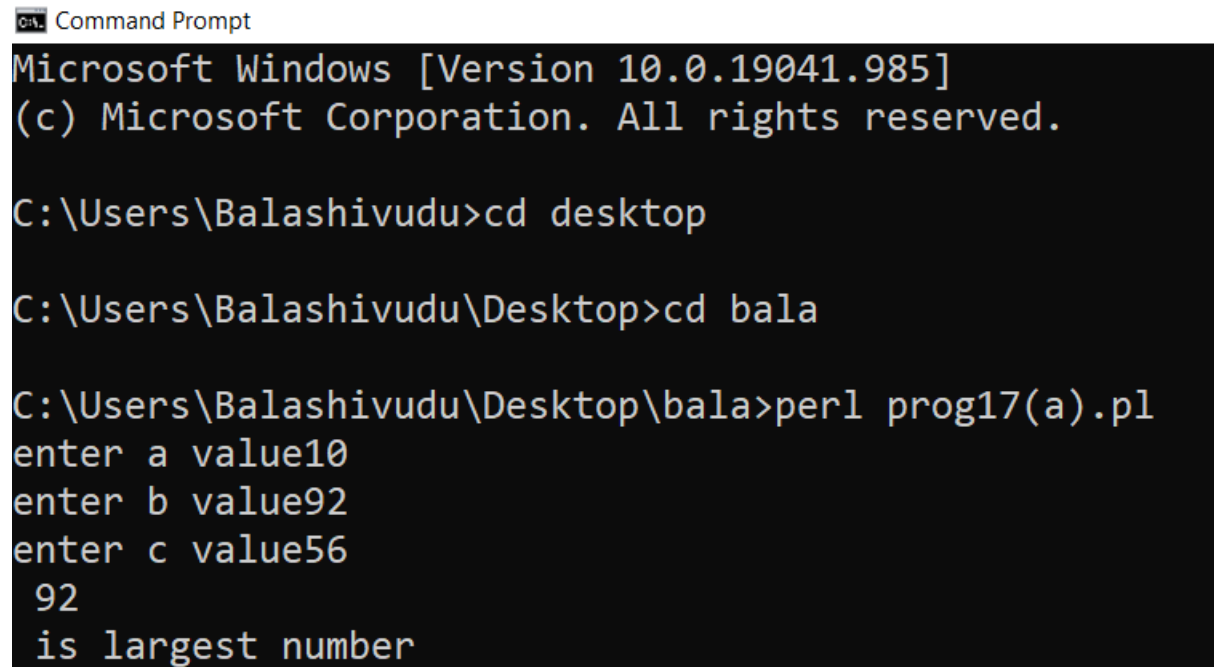
```

```

        print " $c is largest number\n";
    }
}
elseif($b >$c)
{
    print " $b is largest number";
}
else
{
    print " $c is largest nnumber";
}

```

Output:



```

C:\Users\Balashivudu>cd desktop
C:\Users\Balashivudu\Desktop>cd bala
C:\Users\Balashivudu\Desktop\bala>perl prog17(a).pl
enter a value10
enter b value92
enter c value56
92
is largest number

```

#18. a) Write a Perl program to implement manipulating function shift

PERL Code:

```

#!/usr/bin/perl
# Initalizing the array
@x = ('Java', 'C', 'C++');

```

```

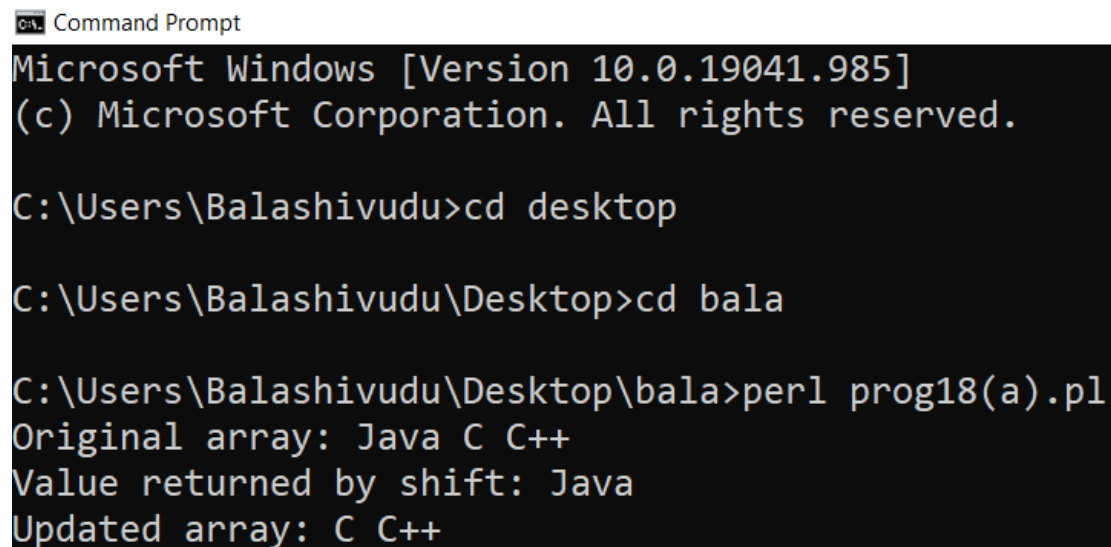
# Print the Initial array
print "Original array: @x \n";

# Prints the value returned
# by shift function
print "Value returned by shift: ",
      shift(@x);

# Array after shift operation
print "\nUpdated array: @x";

```

Output:



```

C:\> Command Prompt
Microsoft Windows [Version 10.0.19041.985]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Balashivudu>cd desktop

C:\Users\Balashivudu\Desktop>cd bala

C:\Users\Balashivudu\Desktop\bala>perl prog18(a).pl
Original array: Java C C++
Value returned by shift: Java
Updated array: C C++

```

#18. b) Write a Perl program to implement manipulating function unshift

PERL Code:

```

#!/usr/bin/perl

# Initializing the array
@x = ('Java', 'C', 'C++');

# Print the Initial array

```



```

print "Original array: @x \n";

# Prints the number of elements

# returned by unshift

print "No of elements returned by unshift: ",

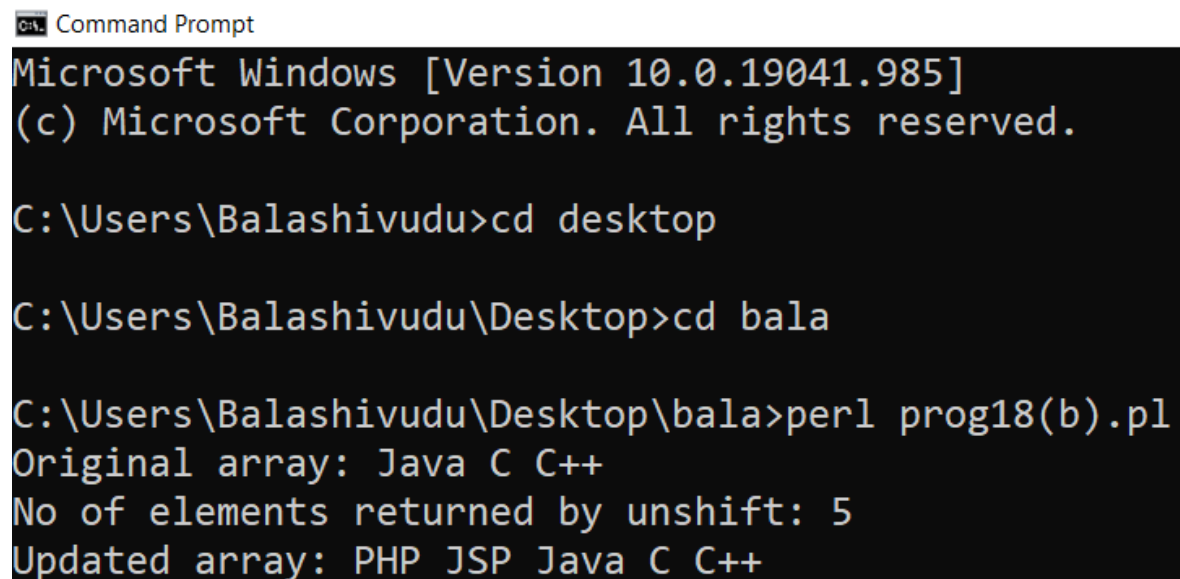
        unshift(@x, 'PHP', 'JSP');

# Array after unshift operation

print "\nUpdated array: @x";

```

Output:



```

C:\Users\Balashivudu>cd desktop

C:\Users\Balashivudu\Desktop>cd bala

C:\Users\Balashivudu\Desktop\bala>perl prog18(b).pl
Original array: Java C C++
No of elements returned by unshift: 5
Updated array: PHP JSP Java C C++

```

#18. c) Write a Perl program to implement manipulating function Push

PERL Code:

```

#!/usr/bin/perl

# Initializing the array

@x = ('Java', 'C', 'C++');

# Print the Initial array

print "Original array: @x \n";

```

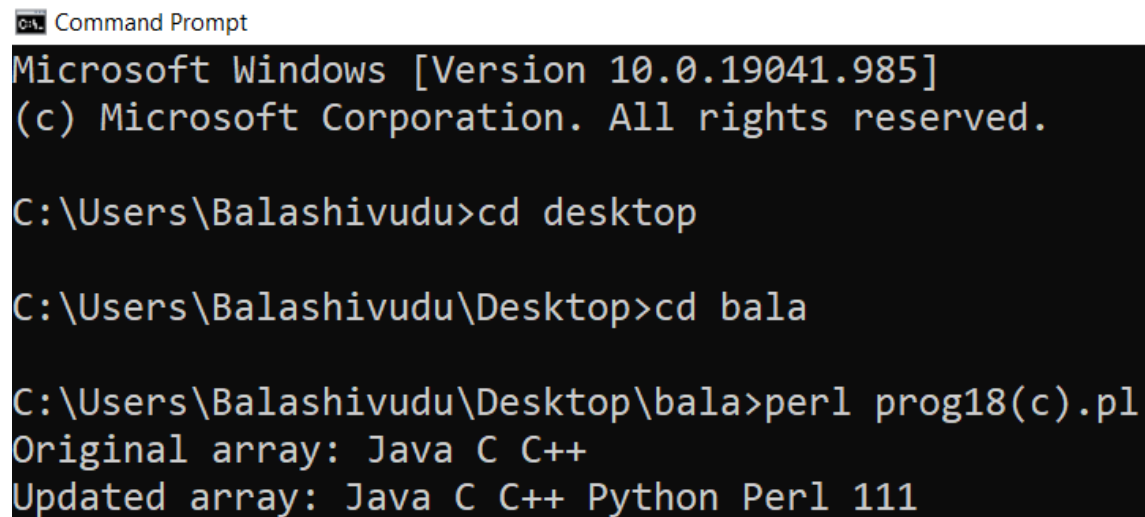
```
# Pushing multiple values in the array
```

```
push(@x, 'Python', 'Perl',111);
```

```
# Printing the array
```

```
print "Updated array: @x";
```

Output:



```
Command Prompt
Microsoft Windows [Version 10.0.19041.985]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Balashivudu>cd desktop

C:\Users\Balashivudu\Desktop>cd bala

C:\Users\Balashivudu\Desktop\bala>perl prog18(c).pl
Original array: Java C C++
Updated array: Java C C++ Python Perl 111
```

#19. a) Write a Perl script to substitute a word, with another word in a string.

PERL Code:

```
#!/usr/bin/perl -w
```

```
# String in which text is to be replaced
```

```
$string = "Goodforhealth";
```

```
# Use of s operator to replace text with pattern
```

```
$string =~ s/for/to/;
```

```
# Printing the updated string
```

```
print "$string\n";
```

Output:

Command Prompt

```
Microsoft Windows [Version 10.0.19041.985]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Balashivudu>cd desktop

C:\Users\Balashivudu\Desktop>cd bala

C:\Users\Balashivudu\Desktop\bala>perl prog19(a).pl
Goodtohealth
```

#19.b) Write a Perl script to validate email address.

PERL Code:

```
use strict;

use warnings;

use 5.010;

use Email::Valid;

foreach my $email ('foo@bar.com', ' foo@bar.com ', 'foo at bar.com') {

    my $address = Email::Valid->address($email);

    say ($address ? "yes '$address'" : "no '$email'");

}
```

Output:

Command Prompt

```
Microsoft Windows [Version 10.0.19041.985]  
(c) Microsoft Corporation. All rights reserved.
```

```
C:\Users\Balashivudu>cd desktop
```

```
C:\Users\Balashivudu\Desktop>cd bala
```

```
C:\Users\Balashivudu\Desktop\bala>perl prog19(b).pl  
yes 'foo@bar.com'  
yes 'foo@bar.com'  
no 'foo at bar.com'
```