```ruby
=begin
Ejercicio 4. Realizar un script denominado diffd con la siguiente sintaxis:
diffd [-r] directorio1 [directorio2]
Donde el script deberá buscar todos los nombres de fichero ubicados en directorio1 y
directorio2, exceptuando los nombres de los directorios, y a continuación mostrar las
diferencias, o sea aquellos ficheros que aparecen en uno de los directorios, pero no
en el otro,
indicando para cada uno de ellos en que directorio se encuentran.
Por otra parte, será necesario introducir una serie de parámetros: directorio1 y
directorio2,
siendo los directorios donde realizaremos la comparación, y como podemos observar en
la
sintaxis
directorio2 es opcional, esto quiere decir que si el usuario no lo especifica el
script comparará
directorio1 con el directorio actual.
Finalmente, si añadimos la opción -r (opcional) el script tendrá que realizar la
acción inversa,
mostrando los nombres de aquellos ficheros que se encuentran en los dos directorios.

=end

=begin
    Usage: Check if a path exists
    Name of method: checkDirectory
    Date of creation: 09/04/2021
    Members: Roberto Jiménez y Alberto Pérez
    Last modification: 09/04/2021
    Parameters:
        Entry:
            - path: path that will be checked
        Out:
            - boolean: True if exists
=end
def checkDirectory path
    return Dir.exist?(path)
end


=begin
    Usage: Get parameters from ARGV
    Name of method: getParameters
    Date of creation: 09/04/2021
    Members: Roberto Jiménez y Alberto Pérez
    Last modification: 09/04/2021
    Parameters:
        Entry:
            - None
        Out:
            - Array with parameters passed
=end

def getParameters
    array = []
    i = 0
    for arg in ARGV
        array[i] = arg
        i = i + 1
    end
    return array
```

```ruby
56 end
57
58 =begin
59     Usage: List files of a directory
60     Name of method: listFiles
61     Date of creation: 08/04/2021
62     Members: Roberto Jiménez y Alberto Pérez
63     Last modification: 08/04/2021
64     Parameters:
65         Entry:
66             - path: path that will be checked
67         Out:
68             - List of files of path
69 =end
70 def listFiles path
71     list = []
72     list = `ls #{path}`
73     return list.split("\n")
74 end
75
76
77 =begin
78     Usage: Remove directory name from a list of files
79     Name of method: removeDirectory
80     Date of creation: 09/04/2021
81     Members: Roberto Jiménez y Alberto Pérez
82     Last modification: 09/04/2021
83     Parameters:
84         Entry:
85             - list: list that will be checked
86         Out:
87             - Same list without directory names
88 =end
89 def removeDirectory list, dir
90     newList = []
91
92     for i in list
93         path= dir + '/' + i
94         if !checkDirectory path
95             newList.push(i)
96         end
97     end
98     return newList
99 end
100
101 =begin
102     Usage: Compare 2 directories to see if exists
103     file with the same name and reverse
104     Name of method: diff
105     Date of creation: 09/04/2021
106     Members: Roberto Jiménez y Alberto Pérez
107     Last modification: 09/04/2021
108     Parameters:
109         Entry:
110             - dir1: first directory to check
111             - dir2: second directory to check
112             - reverse: boolean, to see if -r option is enabled
113         Out:
114             - None
115 =end
```

```ruby
116  def diff dir1, dir2, reverse
117
118      filesDir1 = removeDirectory (listFiles dir1), dir1
119      filesDir2 = removeDirectory  (listFiles dir2), dir2
120
121      for i in filesDir1
122          if filesDir2.include?(i) and reverse
123              puts i + ' is in both directories'
124          elsif !filesDir2.include?(i) and !reverse
125              puts i + ' is only in ' + dir1
126          end
127      end
128      for i in filesDir2
129          if !filesDir1.include?(i) and !reverse
130              puts i + ' is only in ' + dir2
131          end
132      end
133  end
134
135
136  list = getParameters
137  actualDir = `pwd`
138
139  case list[0]
140  when "-r"
141      if list.length == 3 and checkDirectory list[1] and checkDirectory list[2]
142          diff list[1], list[2], true
143
144      elsif list.length == 2 and checkDirectory list[1]
145          diff list[1], actualDir, true
146      else
147          puts 'Syntax error, correct syntax:  ruby diffd_ej4.rb [-r] dir1 [dir2]'
148      end
149  else
150      case list.length
151      when 0
152          puts 'Error, it must be a directory into a parameters'
153          puts 'Syntax: ruby diffd_ej4.rb [-r] dir1 [dir2]'
154      when 1
155          if checkDirectory list[0]
156              diff list[0], actualDir, false
157
158          else
159              puts 'Error, ' + list[0] + ' is not a directory'
160          end
161      when 2
162          if checkDirectory list[0] and checkDirectory list[1]
163              diff list[0], list[1], false
164
165          elsif checkDirectory list[0]
166              puts 'Error, ' + list[1] + ' is not a directory'
167          elsif checkDirectory list[1]
168              puts 'Error, ' + list[0] + ' is not a directory'
169          end
170      else
171          puts 'Too many arguments'
172      end
173  end
174
175
```