Setting up R packages for CORDEX data analysis (Windows OS)

This document provides information on loading required packages to run CORDEX datasets and setting up the workspace directory.

1. Download the CORDEX_training.zip from the given link
   https://www.dropbox.com/t/HL5jLJu0UXlDIDjFj5

2. Unzip the CORDEX_training.zip and keep the folder in C drive:

```
  ➔ This PC ➔ Windows (C) ➔ CORDEX_training
```

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<thead>
<tr>
<th>Name</th>
<th>Date modified</th>
<th>Type</th>
<th>Size</th>
</tr>
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<tr>
<td>Cordex_data</td>
<td>10/12/2020 10:01 AM</td>
<td>File folder</td>
<td></td>
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<tr>
<td>Cordex_plots</td>
<td>10/11/2020 10:03 AM</td>
<td>File folder</td>
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<tr>
<td>esd_package</td>
<td>10/11/2020 10:13 AM</td>
<td>File folder</td>
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<td>10/11/2020 9:28 PM</td>
<td>R Workspace</td>
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<td>RHISTORY File</td>
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<tr>
<td>1_CORDEX_analysis_Day4.R</td>
<td>10/12/2020 10:55 AM</td>
<td>R File</td>
<td>19 KB</td>
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</tbody>
</table>

1. **Cordex_data**: CORDEX data is here
2. **Cordex_plots**: All the output plots are here
3. **esd_package**: This package to be installed locally

Open >> 1_CORDEX_analysis_Day4.R in RStudio. You will see the following window:

```r
6 #remove all previous variables in the R environment
7 rm(list=ls())
9
10 install.packages("devtools")
11 library(devtools)
12
13 #packages to be installed
14 install.packages(c("Kendell","trend","zyP"), dependencies=T)
15 install_local("C:\CORDEX_training\esd_package\esd-master.zip")
17
18 #packages to be loaded
19 library(esd)
20 library(Kendell)
21 library(trend)
22 library(zyP)
```
1. Install the package devtools (line 11, select the line>Run (shortcut: select the line and Ctrl+Enter)
2. Load the package devtools (line 12, select the line>Run)
3. Install the packages: Kendall, Trend, zyp (line 14)
4. Package ‘esd’ needs to be installed locally. Make sure the esd_package is in
   **C:/CORDEX_training_folder/esd_package** (or give the location where it is located) (line 15)
5. After the package is installed, you will need to load the package (line 19-22)

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### Cleaning up and setting the input and output directory

```r
# remove all previous variables in the R environment
rm(list=ls())

# install.packages("devtools")
library(devtools)

# packages to be installed
install.packages(c("Kendall","trend","zyp"), dependencies=T)
install_local("C:\CORDEX_training\esd_package\esd-master.zip")

# packages to be loaded
library(esd)
library(Kendall)
library(trend)
library(zyp)
```

1. Once the package is installed in R, you can comment out the line by putting ‘#’ before the lines (eg. line 10, 13 and 14). The packages do not need to be installed second time in the same computer, but the libraries need to be loaded every time you run the script.

```r
# Setting Start
indir <- "C:\CORDEX_training\Cordex_data\"
outdir <- "C:\CORDEX_training\Cordex_plots\Day4"
```

1. Your CORDEX data need to be in the `indir` (input directory. Eg. 
   C:\CORDEX_training\Cordex_data\" in our case
2. All of your map lots and tables will be stored in `outdir` (output directory. Eg. 
   C:\CORDEX_training\Cordex_plots\Day4\ in our case

---End of the documentation----