Software specifications

Chapter number	Software required (With version)	Free/Proprietary	If proprietary, can code testing be performed using a trial version	If proprietary, then cost of the software	Download links to the software	**Hardware specifications**	OS required
1	R 3.3.1	Free			https://cran.r-project.org/	32-bit and 64-bit architectures (both are supported)	Windows, Mac OS X, and Linux (Any)
2	Rstudio Desktop 0.99.903	Free	-	-	https://www.rstudio.com/	32-bit and 64-bit architectures (both are supported)	Windows, Mac OS X, and Linux (Any)
3	Python 3.5.3	Free	-	-	https://www.python.org/downloads/release/python-353/	32-bit and 64-bit architectures (both are supported)	Windows, Mac OS X, and Linux (Any)
4	Docker	Free			https://docs.docker.com/engine/installation/	32-bit and 64-bit architectures (both are supported)	Windows, Mac OS X, and Linux (Any)

Detailed installation steps (software-wise)

The steps should be listed in a way that it prepares the system environment to be able to test the codes of the book.

1. Installation of R:
   a. Downloading R in Windows:
      - Go to URL http://cran.r-project.org/bin/windows/base/
      - Click on the link Download R 3.3.1 for Windows at the top of the page
      - Run the downloaded executable and follow the installation instructions
      - Pick a working directory for R
      - Once the program has installed, you can start the R from Rgui.exe (Shortcut on desktop)
   b. Downloading R on Mac OSX
      - Go to URL http://cran.r-project.org/bin/macosx/
      - Click on the link Download R 3.3.1 (pkg) file from the page
      - Open the downloaded file and follow the installation instructions
      - After installation R.app from Applications folder can be used to initiate R
   c. Downloading R on Linux:
      - For Linux operating system installation instruction depends on type of Linux.
      - Go to URL http://cran.r-project.org/bin/linux/
      - Pick the distribution folder depending on Linux version.
      - The installation steps can be followed based on the Linux version selection. Below is installation instruction for Ubuntu

         $ sudo apt-get update
         $ sudo apt-get install r-base

   For compilation of R from source
         $ sudo apt-get install r-base-dev

   Package in R can be installed using *install.packages("Package-name")*

2. Installation of RStudio: Pre-requisite for RStudio: Any version of R>2.11.1
   a. Downloading Rstudio version from https://www.rstudio.com/products/rstudio/download3/ depending on the operating system
   b. For windows click on the .exe file and follow installation instruction
   c. For Mac click on .dmg file and follow installation instruction

d. For Ubuntu (Linux version) open the downloaded file in Ubuntu Software Center and follow installation instruction

3. Installation of Python:
   a. Downloading R in Windows:
      i. Downloading python from URL https://www.python.org/downloads/release/python-353/
      ii. Click on the link Download Python 3.5.3 for Windows at the top of the page
      iii. Run the downloaded executable and follow the installation instructions
      iv. Pick a working directory for Python
      v. Once the program has installed, you can start the Python from python.exe (Shortcut on desktop)
      vi. Alternative way is to install Anaconda Stack using URL https://www.continuum.io/downloads
   b. Downloading R in Linux (Ununtu):
      i. The installation steps can be followed based on the Linux version selection. Below is installation instruction for Ubuntu
         $ sudo apt-get update
         $ sudo apt-get install python3.6
   c. Downloading R in Linux (Mac):
      i. Downloading python from URL https://www.python.org/downloads/release/python-353/ for Mac OS
      ii. Click the python-3.5.3-macosx10.6.pkg file in the Downloads folder.
      iii. Incase Gatekeeper is enabled, the installation will get blocked. To enable installation open System Preferences > Security & Privacy and click Open Anyway
      iv. Click Continue, Agree and Install buttons in the Install Python window.

4. Installation of Docker:
   a. Downloading R in Windows:
      i. Downloading Docker for Windows from URL https://docs.docker.com/engine/installation/
      ii. Install Docker Toolbox by double-clicking the installer
      iii. Click **Next** to install all the defaults setting and then **Install**
      iv. While installing ensure you all installer to make necessary changes
      v. After installation verify the docker:
         1. Open docker using shortcut
         2. Type the docker run hello-world command and press RETURN.
   b. Downloading R in Mac:

       i.   Downloading Docker image for Mac from URL https://docs.docker.com/engine/installation/

      ii.   Click Docker.dmg image to open the installer, then drag *Moby the whale* to the Applications folder.

    iii.   Click the whale shortcut

c.   Downloading R in Linux:

       i.   Get docker from repository using below command

           $ curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo apt-key add –

           $ sudo add-apt-repository "deb [arch=amd64] https://download.docker.com/linux/ubuntu $(lsb_release -cs) stable"

      ii.   Update package database using below commend:

           $ sudo apt-get update

    iii.   Install from dokcer repo using below command

           $ apt-cache policy docker-ce

The other dependent packages used in this book can be downloaded using steps mentioned in Chapter 1.