

# Coding for Data Science and Data Management

Data Science and Economics (DSE), 2019/2020, The University of Milan

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## Midterm exam: R Package

Create an R package which deals with task(s) of your choice. The aim of the project is to assess your ability in dealing with the R programming language. You are **free** to choose the task(s) you **like** most.

The project is an **individual project**, even if you are strongly encouraged to work in groups and help each other. Please do take advantage of online resources and note that copying code snippets is totally fine. On the other hand, copying the whole project or most of it is (obviously) not allowed.

## Delivery

Upload the code to your repository<sup>2</sup> available at <https://github.com/unimi-dse>

The package must include a `README.md` file containing a short description of the package and how to use it.

## Deadline

16 February 2020 | 23:59

## Evaluation

### Passing grade (18/30)

The package must be installed with the following command:

```
devtools::install_github("unimi-dse/ID")
```

**If the package cannot be installed or raises errors, the exam is failed.**

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<sup>2</sup>to set up the repository create an account on GitHub and email me with your GitHub username. The email must be sent from your University address and use "*DSE Coding Midterm*" as subject. On the other hand, I suggest to create your GitHub account using your personal email address.

### Additional points (9/30)

The package must deal with some of the following topics. Choose the topics you like most. In any case, max 9 points can be earned.

title	description	points
Data Acquisition	Import data via local/remote files, R packages, APIs or web scraping.	3
Data Visualization	Visualize data with <code>ggplot2</code> or <code>plotly</code>	3
Data Analysis	Use R packages to perform some kind of data analysis. The complexity of the analysis is not relevant. The aim is to show your ability to work with R packages.	3
Interactive Interface	Build an interactive interface with <code>shiny</code>	3
Code Optimization	Speed up the code using <code>Rcpp</code> or parallel computing	3

### Additional Points (3/30)

Up to 3 additional points are assigned based on:

title	description	point
README	Use the Markdown syntax to provide a high quality <code>README.md</code> file.	1
Documentation	Document your functions using <code>roxygen2</code> . It must be possible to access the documentation of your function(s) using the standard syntax <code>?functionname</code> . If you are developing an interactive interface you still need to document the function which runs the interface.	1
Code quality	Coding style and modularity.	1

### Laude (30/30 with honors)

If you achieve 30/30 in the previous steps, honors can be awarded based on the code quality.