

Object oriented R6

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1. Load the required packages

```
library(R6)
```

```
## Warning: package 'R6' was built under R version 3.5.2
```

2. Create a new class template/object generator with the name `Football_Generator`, it should comprise of these components: Three private data members: `Player_Name`, `Player_Club` & `Player_Salary` Three public functions: `set_name()`, `set_club()` and `set_salary()`

```
Football_Generator <- R6Class("Football", private = list(Player_Name = NA, Player_Club = NA, Player_Salary = NA),
  public = list(set_name = function(x) {private$Player_Name = x},
               set_club = function(x) {private$Player_Club = x},
               set_salary = function(x) {private$Player_Salary = x}))

player1 <- Football_Generator$new()
player1
```

```
## <Football>
##   Public:
##     clone: function (deep = FALSE)
##     set_club: function (x)
##     set_name: function (x)
##     set_salary: function (x)
##   Private:
##     Player_Club: NA
##     Player_Name: NA
##     Player_Salary: NA
```

```
player1$set_name("Messi")
player1$set_club("Barcelona")
player1$set_salary("??500,000")
player1
```

```
## <Football>
##   Public:
##     clone: function (deep = FALSE)
##     set_club: function (x)
##     set_name: function (x)
##     set_salary: function (x)
##   Private:
##     Player_Club: Barcelona
##     Player_Name: Messi
##     Player_Salary: ??500,000
```

3. For the above class template create two new objects and assign values to the private data members with the public functions

```
Football_Generator <- R6Class("Football", private = list(Player_Name = NA, Player_Club = NA, Player_Salary = NA,
  Player_Age = NA, Player_Country = NA),
  public = list(set_name = function(x) {private$Player_Name = x},
               set_club = function(x) {private$Player_Club = x},
               set_salary = function(x) {private$Player_Salary = x},
               set_age = function(x) {private$Player_Age = x},
               set_country = function(x) {private$Player_Country = x}))

player2 <- Football_Generator$new()
player2$set_name("C.Ronaldo")
player2$set_club("Real Madrid")
player2$set_salary("??500,000")
player2$set_age(35)
player2$set_country("Portugal")
player2
```

```
## <Football>
##   Public:
##     clone: function (deep = FALSE)
##     set_age: function (x)
##     set_club: function (x)
##     set_country: function (x)
##     set_name: function (x)
##     set_salary: function (x)
##   Private:
##     Player_Age: 35
##     Player_Club: Real Madrid
##     Player_Country: Portugal
##     Player_Name: C.Ronaldo
##     Player_Salary: ??500,000
```

4. Create a new class generator with the name `???Movie_Generator???`, it should comprise of these components: `???Three private data members: ???Movie_Name???, ???Protagonist_Name???, ???Movie_Budget???` 5. For the above class template, assign values to the private data members using initialize method

```
Movie_Generator <- R6Class("Movie", private = list(Movie_Name = NA, Protagonist_Name = NA, Movie_Budget = NA),
  ,
  public = list(initialize = function(x, y, z) {
    private$Movie_Name = x
    private$Protagonist_Name = y
    private$Movie_Budget = z
  }))

Movie_details <- Movie_Generator$new(c("Paa", "Piku", "Pk"),
  c('Abhishek Bachan', 'Amitabh Bachan', 'Amir Khan'),
  c('10crores', '20crores', '50crores'))

Movie_details
```

```
## <Movie>
##   Public:
##     clone: function (deep = FALSE)
##     initialize: function (x, y, z)
##   Private:
##     Movie_Budget: 10crores 20crores 50crores
##     Movie_Name: Paa Piku Pk
##     Protagonist_Name: Abhishek Bachan Amitabh Bachan Amir Khan
```

6. Create a new class generator with the name `???Vegetable_Generator???`, it should comprise of these components: `???Two private data members: ???Vegetable_Name???, ???Vegetable_Cost???` 7. For the above class template, create two new objects and assign values to the private data members by using Active Bindings

```
Vegetable_Generator <- R6Class("Vegetable", private = list(..Vegetable_Name = NA, ..Vegetable_Cost = NA),
  active = list(name = function(x) {private$..Vegetable_Name = x},
    cost = function(x) {private$..Vegetable_Cost = x}))

vegetable1 <- Vegetable_Generator$new()
vegetable1$name <- "Cabbage"
vegetable1$cost <- "Rs 150"
vegetable1
```

```
## <Vegetable>
##   Public:
##     clone: function (deep = FALSE)
##     cost: active binding
##     name: active binding
##   Private:
##     ..Vegetable_Cost: Rs 150
##     ..Vegetable_Name: Cabbage
```

```
vegetable2 <- Vegetable_Generator$new()
vegetable2$name <- "Brinjal"
vegetable2$cost <- "Rs 80"
vegetable2
```

```
## <Vegetable>
##   Public:
##     clone: function (deep = FALSE)
##     cost: active binding
##     name: active binding
##   Private:
##     ..Vegetable_Cost: Rs 80
##     ..Vegetable_Name: Brinjal
```