Introduction to R Software

Swayam Prabha

Lecture 1

Why R

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Slides can be downloaded from

http://home.iitk.ac.in/~shalab/sp

How to Learn and Follow the Course:
Basics

`Blue Colour Courier New Font` means a Command or Syntax in R.

Black colour Calibri font means usual expression.

Example:

Statement: The assignment operators are the left arrow with dash `<-` and equal sign `=`

`x <- 20` assigns the value 20 to `x`

`x = 20` assigns the value 20 to `x`

How to Learn and Follow the Course: Basics

Outcome over R console:

```
> x = 20
> x
 [1] 20
```

How to Learn and Follow the Course:

Basics

Syntax:

`y = x * 2` assigns the value `2*x` to `y`.

`z = x + y` assigns the value `x + y` to `z`.

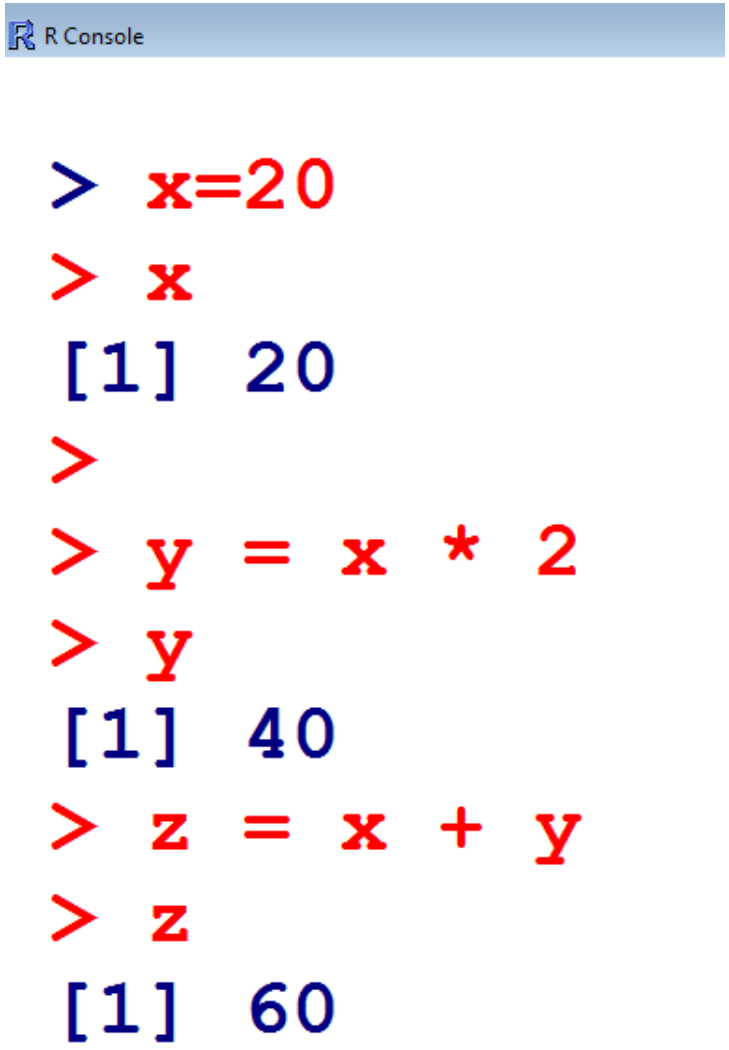
Outcome over R console:

```
> y = x * 2
> y
[1] 40

> z = x + y
> z
[1] 60
```

How to Learn and Follow the Course: Basics

Screenshot of outcome over R console



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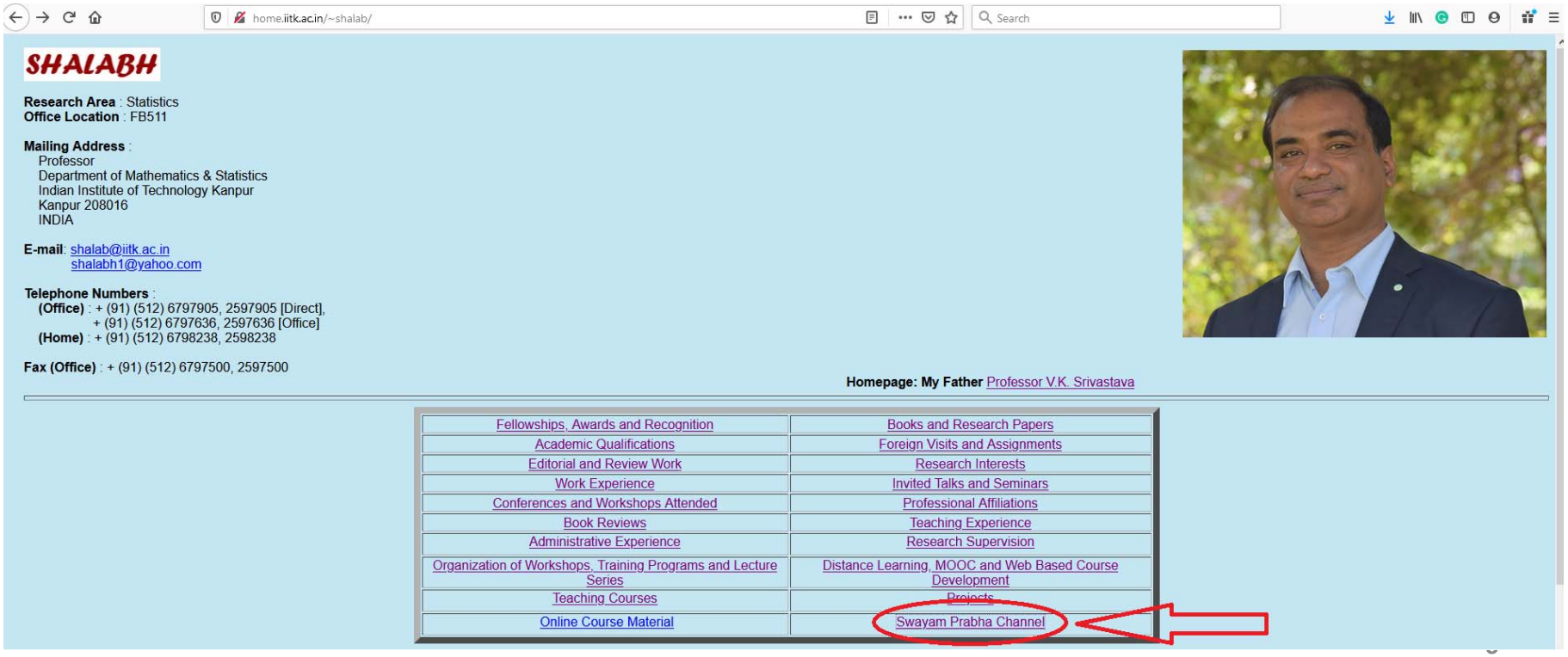

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After clicking at Swayam Prabha Channel, come to following:

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Swayam Prabha Course

Suggested books:

1. Introduction to Statistics and Data Analysis - With Exercises, Solutions and Applications in R By Christian Heumann, Michael Schomaker and Shalabh, Springer, 2016
2. The R Software-Fundamentals of Programming and Statistical Analysis -Pierre Lafaye de Micheaux, Remy Drouilhet, Benoit Liquet, Springer 2013
3. A Beginner's Guide to R (Use R) By Alain F. Zuur, Elena N. Ieno, Erik H.W.G. Meesters, Springer 2009

Slides used in the lectures

Lecture number	Title of the lecture	Download Slide
1	Why R , Installation Procedure and How to Start	Click here Lecture 1
2	Help, Demonstration, Examples, Packages and Libraries	Click here Lecture 2

How to Learn and Follow the Course: Slides of the course

Scan following QR code and it will come at

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Developers of R Software

- R was created by Ross Ihaka and Robert Gentleman at the University of Auckland, New Zealand.
- Currently developed by the R Development Core Team.
- R is named partly after the first names of the first two R authors.
- Available at www.r-project.com
- The project was conceived in 1992, initial version released in 1995 and a stable beta version in 2000.

Popularity of R

Initially, people were not confident to use R. Gradually, R gained confidence of users.

Several publishers started a series on R books

R is one of the highest paid IT skill and holds large share in advanced analytics software

It supports more than 10,000 free packages which helps the data scientist and analyst.

Source : LinkedIn Skills, O'Reilly Survey

Use of Software

Where to get the software?

Use trial version for one or two weeks else buy it.

Buying means paying cost.

How much is the cost?

Use of Software

R software saves us from many legal complications.

It gives us authenticity and confidence to report our results to any research paper or book for publications

With modern operating systems, many information is transmitted automatically without telling us.

Where R can be used?

Academics

- Teaching illustrations
- Statistical and mathematical computations
- Computations
- Numerical approximations
- Optimization
- Simulations

Where R can be used?

Subjects

- Biology - Bio statistics
- Health statistics
- Actuarial
- Psychometrics
- Engineering- Mechanical, Civil, Electrical, Computer science etc.
- Medical science