Programming in C and R

Course Outcome:

Upon successful completion of this course, students will be able to:

1. Understand the concepts of Constants, Variables and Keywords in programming languages like C and R.
2. Apply relational and logical operators to write efficient code in C and R.
3. Implement conditional statements (If, If-Else) and loop structures (For, While, Do-While) to control the flow of the program.
4. Utilize control statements such as Break, Exit, and Continue functions for enhanced program control.
5. Demonstrate proficiency in working with arrays, including single dimensional and two-dimensional arrays.
6. Develop multi-function programs using user-defined functions in C, including defining functions, handling return values, and using function prototypes.
7. Differentiate between various categories of functions in C, including functions with no arguments or return values, functions with arguments but no return values, and functions with arguments and return values.
8. Implement recursion functions for solving complex problems recursively.
9. Generate random samples from different probability distributions and understand their applications in programming.
10. Gain familiarity with R programming language, including its history, overview, and installation process.
11. Utilize the R-console and R-script for writing and executing R code, along with saving and accessing files.
12. Manage libraries in R, load and install packages, and use commands like ls() and rm() effectively.
13. Perform basic mathematical functions in R, define variables, and work with Unary and Binary operators.
14. Develop a strong foundation in programming concepts and problem-solving skills, which can be applied in real-world scenarios.