

**PAMANTASAN NG LUNGSOD NG MAYNILA**

*(University of the City of Manila)*

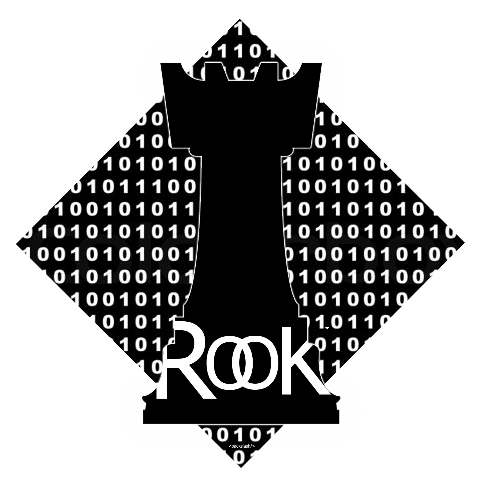
*Intramuros, Manila*

College of Engineering and Technology

Computer Science Department

**CSC 414 – AUTOMATA AND LANGUAGE THEORY**

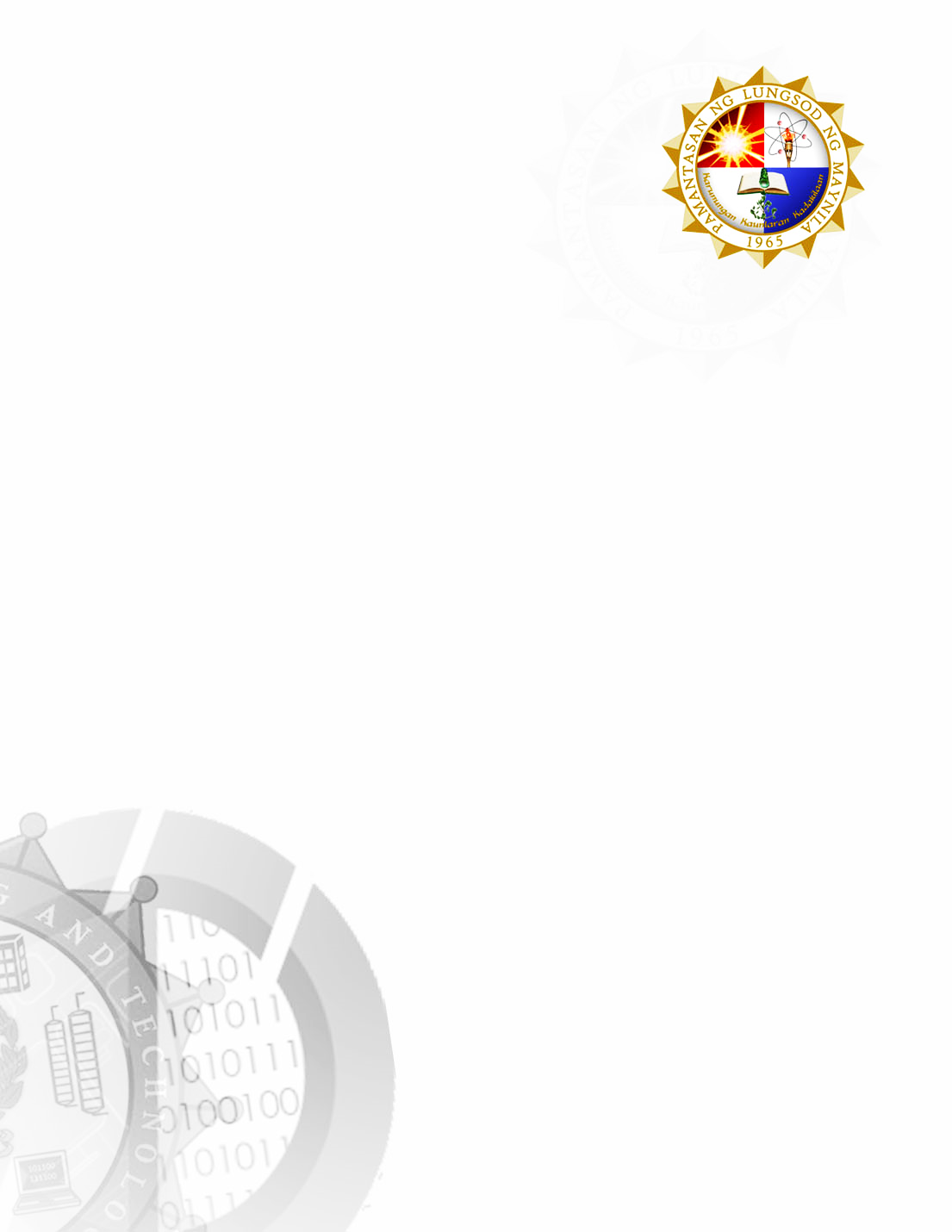
THE ROOK COMPILER



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**TABLE OF CONTENTS**

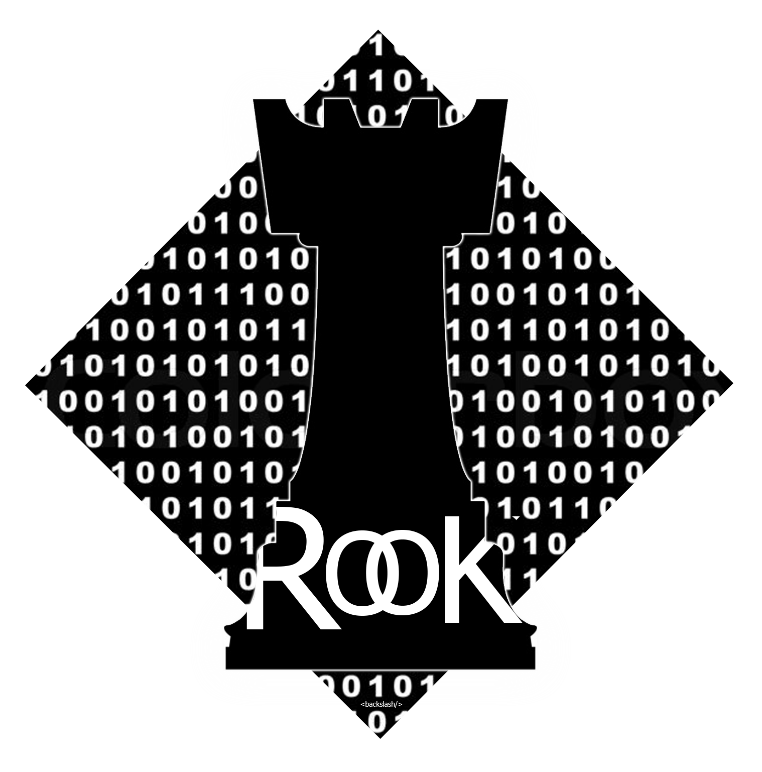
1. Language Overview
2. General Rules
3. Structure of the Program
4. Specific Rules
5. Constants
6. Variables
7. Data Types and Literals
8. Identifiers
9. Whitespaces
10. Operators
11. Operators Precedence
12. Expression
13. Statements
14. Functions
15. Array
16. File
17. Reserved Words
18. Reserved Symbols
19. Arithmetic Operator
20. Assignment Operator
21. Relational Operator
22. Logical Operator
23. Unary Operator
24. Other Operators
25. Regular Expressions
26. Reserved Words
27. Reserved Symbols
28. Identifiers
29. Literals
30. Regular Definitions
31. Delimiters
32. Reserved Words
33. Reserved Symbols
34. Identifiers
35. Literals
36. Transition Diagram

**Language Overview**

ROOK is a software development platform which adapted the simple structure of C and C++. This compiler targets all the people who want to learn programming in the easiest way possible. It is especially made for beginners in the area of computing.

ROOK is an idea that came from the word “rookie” which means “beginner”, since it aims to be used by beginners. It also means a tower in chess, which serves as the symbol for the learning foundation of rookie programmers.

Logo:



The logo is based on a chess piece which is the *Rook* that represents the fact of watching or observing; incorporated with some binary figures at the back representing the most basic and the smallest unit in data hierarchy.

**General Rules**

1. The main function *must start with an exclamation point (****!****)* prior the word **START**.
2. The main function *must be terminated by the word* **END** followed by its terminator― exclamation point (**!**).
3. The reserved words **read** and **write** are used for input statements and output statements, respectively.
4. Statements are *terminated with a period (****.****)*.
5. The reserved word **fixed** is used for *declaring constant variables*.
6. Constant variables are *only allowed to be declared globally*.
7. Declaration of global variables, and function definitions are *only allowed before the main function* (**!START-END!**).
8. Declaration of local variables are *allowed anywhere* *inside the main function* (**!START-END!**).
9. Identifiers must *always begin with a small letter* and can only consist a minimum of 1 alphanumeric character up to 10 alphanumeric characters *without the use of any special characters* such as dash, underscore, space, etc.
10. Identifiers are *case sensitive*. Thus, rooK and rook are two different identifiers.
11. Reserved words *must not* be used as an identifier.
12. Reserved words *must always be in lowercase letters except for the reserved words* **!START-END!***, which must always be in uppercase letters*.
13. The reserved word **file** is *used to declare a data structure*.
14. Declaration of data structures *must be placed before the main function* (**!START-END!**).
15. Functions must begin with the word “**start**” and must end with the word “**end**”.
16. Functions *must also be placed before the main function* (**!START-END!**).
17. Declaration of constants, variables, struct, and functions *can be done in any order*.
18. Conditional statements include **if**, **elseif**, **else**, and **switch**.
19. Looping statements include **for**, **while**, and **do-while**.
20. *At least one (1)* whitespace between words is *allowed*.
21. Spaces, indentions, line feeds, and comments are considered as whitespace characters.
22. Comments *must always* begin with “**//**”.
23. Comments are *optional*.
24. Multiline comments are not supported.

**Structure of the Program**

|  |
| --- |
| <Functions>  <File Declaration>  <Global Declaration>  **!START**  <statement>.  <statement>.  <statement>.  **END!** |

Sample code of ROOK printing Hello World!

|  |
| --- |
| **!START**  **write** “Hello World!”.  **END!** |

|  |
| --- |
| **!START** serves as the *main function* in C.  **!START** and **END!** serves as the *curly braces* in the main function.  The reserved word **write** has the same purpose of *cout* in C++. |