

Laboratory task:

For this lab, each student must create an NASM assembler program that contains 10 cyclic processes (functions). Additionally, the program must allow the user to choose which of the 10 processes to execute at program launch

- To accomplish this task, follow the steps below:
- Write an interactive menu that allows the user to choose from the 10 processes.
- Write the code for each of the 10 processes. Each process must be written cyclically so that the program always returns to the interactive menu after a process is completed.
- Ensure that your program is well-commented and structured clearly so that it is easy to understand and modify
- Test the program to ensure that it works correctly and that the user can choose any of the 10 processes
- Ensure that each student personalizes their program in a unique way so that there are no identical programs.
- Prior to presenting the lab, each student must present their program and demonstrate that it can be used to choose any of the 10 processes.
- ❖ **The first program will contain a generator of 10 random numbers from 1 to 55**
- ❖ **These will be the varinates of each**

String:

1. Concatenating two strings
2. Comparing two strings
3. Searching for a substring in a string
4. Replacing a substring with another substring in a string
5. Converting a string to uppercase
6. Converting a string to lower case
7. Calculating the length of a string
8. Extracting a Character from a String
9. Inverting a string
10. Removing spaces from a string
11. Separating a string into words
12. Replacing a character with another character in a string
13. Generating a random string
14. Checking if a string is a palindrome
15. Deleting a character from a string
16. Adding a character to a string
17. Finding the position of a character in a string
18. Converting a Number to a String
19. Converting a String to an Integer
20. Converting a String to a Real Number
21. Extracting a substring from a string, starting from a given position
22. Replacing all occurrences of a character with another character in a string
23. Removing a substring from a string
24. Adding a prefix to a string
25. Adding a suffix to a string
26. Converting a string with numbers to a string with words corresponding to numbers

Math:

1. Adding two numbers
2. Subtraction of two numbers
3. Multiplication of two numbers
4. Dividing two numbers
5. Calculating the square root of a number
6. Calculating the factorial of a number
7. Converting a number from base 10 to base 2
8. Converting a number from base 10 to base 16
9. Generating a random number
10. Checking whether a number is odd or even
11. Checking whether a number is prime or not
12. Calculating the sum of prime n natural numbers
13. Calculating the sum of prime n even numbers
14. Calculating the sum of the prime n odd numbers
15. Determining the larger of two numbers
16. Determining the smallest number between two numbers
17. Determining the arithmetic mean of two numbers
18. Determining the arithmetic mean of a list of numbers
19. Sorting a list of numbers in ascending order
20. Sorting a list of numbers in descending order
21. Reversing a list of numbers backwards
22. Checking whether a list of numbers is palindromic
23. Calculating the sum of the elements in a list of numbers
24. Calculating the product of elements in a list of numbers
25. Finding an element in a list of numbers
26. Removing an element from a list of numbers
27. Adding an element to a list of numbers
28. Calculating the Euclidean distance between two points in two-dimensional space
29. Calculating the area of a triangle in two-dimensional space
30. Calculating the perimeter of a circle.