ALGORITHM ANALYSIS DESIGN PROJECT REPORT

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Group D

Algorithm Analysis Design - PROJECT REPORT :

INTRODUCTION :

- My idea for this project is to make an interactive website for algorithm paradigms
- This website has been created using HTML, external CSS and internal Javascript
- In addition to this, bootstrap and sweetalert libraries have also been used ...

PHASE-WISE WORK DIVISION :

- Phase 1 — (Completed : Oct 20th)
  - Rephrasing the theory of the algorithm design techniques into simple steps (or sub tasks)
  - I have chosen divide and conquer, greedy and dynamic programming approaches

- Phase 2 — (Completed : Oct 22nd)
  - Selecting / refining the examples for each paradigm
  - Currently I have the following examples for each paradigm :
    - Divide and conquer : Merge sort
    - Greedy strategy : Selection sort
    - Dynamic Programming : Nth Fibonacci number using DP, Insertion sort

- Phase 3 - (Completed : Nov 1st)
  - Design the menu-driven to make the website interactive

- Phase 4 - (Completed : Nov 25th)
  - Write programs to automatically execute the stepwise tasks of the chosen examples

- Phase 5 - (Completed :Dec 1st)
  - Write the report

USAGE GUIDELINES :

- Clone / download the repository in your local machine. Please do not alter the file structure. (P.S :) You can ditch README.md and Report/)
- Tested all the HTML, CSS and JS files in Brave browser. Disclaimer : May not work in other browsers
- Open home.html (after which you will be able to navigate to and from this webpage to others)

HOPE YOU GUYS BENEFIT FROM MY WEBSITE !!!

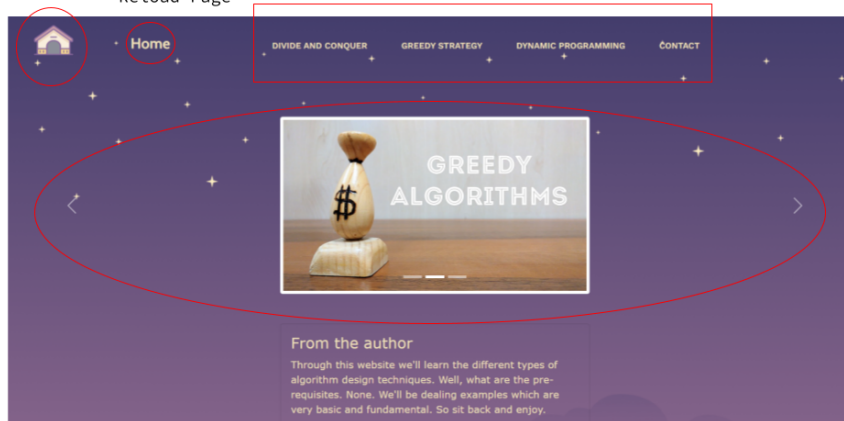Here is a [link](#) to my github repository

In the next page I have mentioned about my website and how to navigate through it ...

How to navigate through my website :

To go to
the top of
the page

Reload Page

Integrated Navbar to view
other pages

DIVIDE AND CONQUER   GREEDY STRATEGY   DYNAMIC PROGRAMMING   CONTACT

Home

GREEDY ALGORITHMS

From the author

Through this website we'll learn the different types of
algorithm design techniques. Well, what are the pre-
requisites. None. We'll be dealing examples which are
very basic and fundamental. So sit back and enjoy.

Wallpaper Carousel
to view the
content of the
following pages

This is a strategy where we divide the problem into smaller sub-
problems. By solving the smaller sub-problems, we obtain the
solution for the main problem. This strategy was said to be used by
the great Napolean himself ...

Under this paradigm, we will be learning Merge Sort :

The algorithm goes like this ...

- We partition the input array into two halves and keep on partitioning until
  the array is indivisible (length <= 2)
- We then sort these partitions separately and merge them pairwise.
- Finally, we get the sorted array.

Click the button below to see how merge sort works ...

Merge Sort

Button : Click to see how the
program works ...

Let's Learn Merge sort ...   Populate Array

Button : Click
to reload
Terminal in
order to
register new
inputs

Integrated
Terminal

Music automatically plays.
Click to play/ pause

INTEGRATED TERMINAL CONTROLS :

Let's find the Nth number in the Fibonacci Series ...   Initialize N

Your Input : 3   Start ???

Button : Click this
to start the program

Music in
"PAUSE" state

Let's find the Nth number in the Fibonacci Series ...

Your Input : 3

f(n) = f(n-1) + f(n-2)
Instead of computing f(n) every time, we are going to store these values in an array .   Next Number

Button : Click this to
see the output of next
iteration

Music automatically
pauses once the
program is over ...

Let's find the Nth number in the Fibonacci Series ...

Your Input : 3

f(n) = f(n-1) + f(n-2)
Instead of computing f(n) every time, we are going to store these values in an array ...

Iteration 1 :
    Input : 0 1
    Output : 0 1 1

The 3rd number in the Fibonacci Series : 1

Done !

Press the
reload button
to execute the
program for a
different input