

## CHAPTER 4

### ANALYSIS AND DESIGN

#### 4.1 Analysis

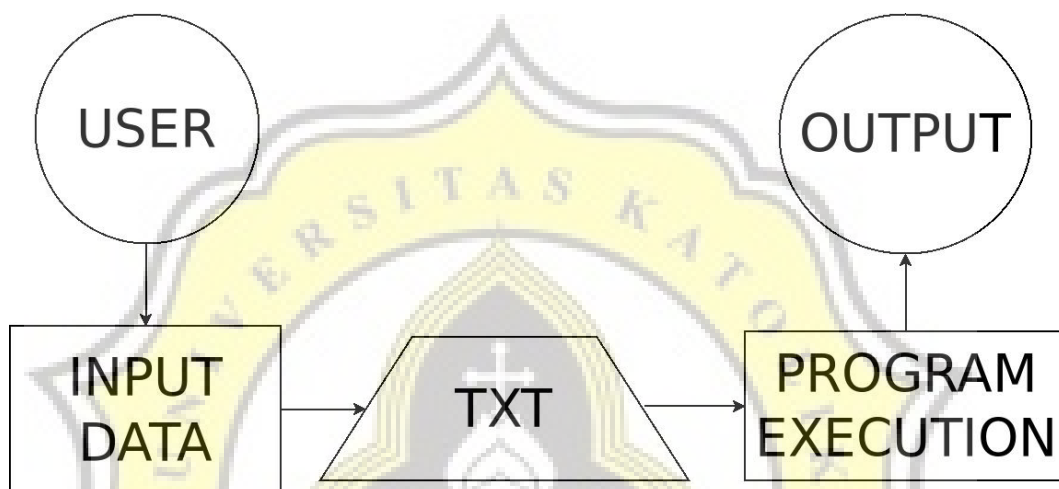


Illustration 4.1: A process diagram for the path of this program

Explanation of the picture Illustration 4.1 is the first process is the user must fill in the data in the form of a value that has been prepared on the user interaction page (input data), the second process is data that has been input by the user will be stored in the file txt automatically (txt), the third process is the data already stored in the file txt will be automatically executed by the program, and the last process is the results of program execution will be displayed in the form of visualization that illustrates the binary tree series using GD library objects in PHP.

PHP is not limited just to create html output only, but can also draw directly to the browser. It can also be used to create image files formats with PNG, JPG, JPEG, etc.

To form a binary tree series in this program we need several methods, which will be mentioned and described below,

- *Insert*, this works to add data in the form of value obtained from the user. In this function there is a random system that works to randomly generate numbers, but in this random user can also replace it as desired, which is in the user interaction page..
- *Search*, this work to search for data in accordance with the request of the user, that has been stored in txt after doing insert process, which is in the user interaction page.
- *Delete*, this work to delete one data in accordance with the request of the user, which is in the user interaction page.

To illustrate the visualization in the binary tree, it is also necessary to coordinate as the layout of the GD Graphics Library object. In making coordinates use a variable for initialization and an array(`data[0]`,`data[1]`) command to store it. For its implementation will be explained in chapter 5.<sup>1</sup>

## 4.2 Desain

In the program execution on Illustration 4.1 contained a function that would form a binary tree circuit i.e;

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1 <http://php.net/manual/en/intro.image.php>

2 [https://en.wikipedia.org/wiki/GD\\_Graphics\\_Library](https://en.wikipedia.org/wiki/GD_Graphics_Library)

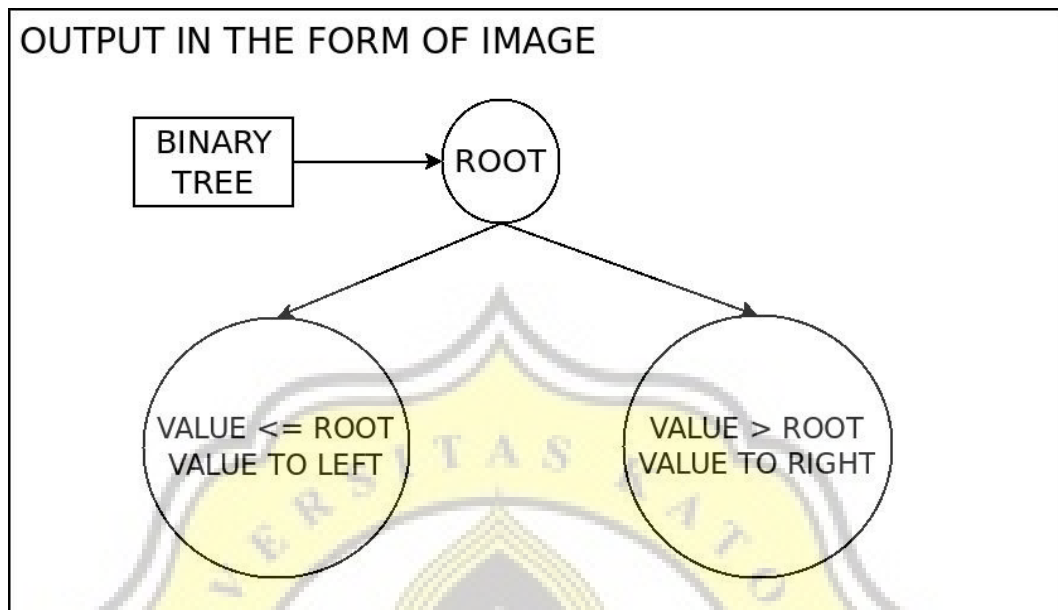


Illustration 4.2: Program flow that exists in program execution

The explanation of process from Illustration 4.2 is the data contained in the txt file will be called by the binary tree function. In the binary tree function there is a root value to be printed or displayed on the output visualization and used as a comparator value, if the value of the data is smaller than the root value, it will be located on the left, then If the value of the data is greater than the root value, it will be located on the right. All relations from root, left relation, and right relation will be displayed on output in imagepng.