

Report for URL Validation Project

Name: Mohamed Hesham Moustafa El Shamarka
ID:6952

Name: Mohammad Helaly
ID:6870

To validate an URL , We first had to check if the URL we entered was valid or not which was done through the method of validateLink in the class of ValidateOfLink which is of boolean type where the URL ,which was connected through Jsoup, would return valid to be true if there were no errors to the http status and would return valid to be false if there were. This is later used in another Method called validate 2.

ExtractLinks is a class made to extract all the sub-links in the main URL, these links which if inspected on a browser always had a tag of <a followed by href.

The link - Elements z = doc.select("a[href]"); - is a way to select all the elements in the url that start with the tag a followed by href to, some links hidden in the url do not start with http so a for loop that starts from 0 till z.size() - which is the size of the url- with a counter i , is used to check if the link doesn't start with http://, if it does then it does not affect it , if it doesn't it adds it. Then the first method validateLink is called in the for loop to check if every link is valid or not , and would print out the result. If in the end the url entered is incorrect then a message is printed displaying that it is invalid.

Validate2 is a method combining ExtractLinks and validateLinks where it receives (String link, int depth, int desiredDepth,int threadNo) and starts with an if function calling the function validateLink which is explained above, then it checks if the depth the user inputs is the depth in the function and if it is it returns and the if continues, the url , and elements z from ExtractLinks are used here with 2 counters (Val , inVal) where Val increases if the loop is valid in validateLink and inVal increases if the loop is not valid in validateLinks.

The run time is calculated in the class of ValidateOfLinks through the method of validate2.

Threads are initiated in a class Threads where 4 private variables (String link,int depth,int depthEND,int threadNo) are used. depthEND is the desired depth of the user and threadNo is the number of threads being used. A void run method must be used with the thread calling to validate2 to be used with try and catch to allow usage in validate2.

The threads used in validate2 are applied using static ExecutorService es = Executors.newFixedThreadPool(n) and creating threads by initializing them as null in the function then starting them using es.execute(t1). These threads are important to decrease the runtime of the program depending on the amount of threads used in relation to the size of number of links in the entered URL