**REGEX CAPTURING GROUPS INTRODUCTION**

*Capturing Groups* are built by enclosing regular expressions inside of a pair of parenthesis. A simple example of a capturing group would be a regex string literal enclosed in parenthesis like this: **"(Lizard)"**. On the surface regex *capturing groups* appear to be very similar to plain old regex *string literals*, and the example above will actually be functionally identical. When *Capturing groups* are used in complicated expressions such as "(([01]?\\d\\d?|2[0-4]\\d|25[0-5])\\.){3}([01]?\\d\\d?|2[0-4]\\d|25[0-5])", they not only make the expression more readable, but they group regular expressions into things known as ***tokens*.**

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| **package** com.Soham;  **import** java.util.regex.\*;  **public class** Main {   **public static void** main(String[] args) {  *//(Lizard) - string literal; [sz] - character class  //we should have (Lizard) then we need either s or z  displayFind*(**"(Lizard)[sz]"**,**"Should I name my new pet store Happy Lizards or Happy Lizardz?"**);   *//here we find (Lizard), but can't find either s or z - so it will shoe NOT MATCHED  displayFind*(**"(lizard)[sz]"**,**"Is a snake a lizard?"**);   *//SAME LIKE BEFORE  displayFind*(**"Lizard[sz]"**,**"Should I name my new pet store Happy Lizards or Happy Lizardz?"**);   *//Just using or operator(|| circuted; |), this represents either 'Lizards' or 'Lizardz', same like '(lizard)[sz]'  displayFind*(**"(Lizards)|(Lizardz)"**,**"Should I name my new pet store Happy Lizards or Happy Lizardz?"**);   *//string litral followed by a capturing string  displayFind*(**"(Lizard)s|(Lizard)z"**,**"Should I name my new pet store Happy Lizards or Happy Lizardz?"**);   *//regular expression inside capturing group  displayFind*(**"(Lizard[s])|(Lizard[z])"**,**"Should I name my new pet store Happy Lizards or Happy Lizardz?"**);   *//two or more capturing groups at a time  displayFind*(**"((Lizard)[s])|((Lizard)[z])"**,**"Should I name my new pet store Happy Lizards or Happy Lizardz?"**);    *//picks either '(Lizard)[sz] ' or ' (my) ' , bcz we can see (my) and (Lizard)[sz] are in different CAPTURING GROUP,  //this case it's not true that we have to find '(Lizard)', that will be ended with ['sz' or 'my']  displayFind*(**"(Lizard)[sz]|(my)"**,**"Should I name my new pet store Happy Lizards or Happy Lizardz?"**);  }   **public static void** displayFind(String regex, String find\_me){  **boolean** getmatch = **false**; *// Pattern p = Pattern.compile(regex); // Matcher m = p.matcher(find\_me);* Matcher m = Pattern.*compile*(regex).matcher(find\_me);   **while** (m.find()){  System.***out***.println(**"Matcher found "** + m.group() + **" at index "** + m.start() + **" for regex "** + regex + **" with "** + find\_me);  getmatch = **true**;  }   **if** (!getmatch){  System.***out***.printf(**"no match for "** + regex + **" on "** + find\_me);  }  System.***out***.println();  } } |

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| Matcher found Lizards at index 37 for regex (Lizard)[sz] with Should I name my new pet store Happy Lizards or Happy Lizardz?  Matcher found Lizardz at index 54 for regex (Lizard)[sz] with Should I name my new pet store Happy Lizards or Happy Lizardz?  no match for (lizard)[sz] on Is a snake a lizard?  Matcher found Lizards at index 37 for regex Lizard[sz] with Should I name my new pet store Happy Lizards or Happy Lizardz?  Matcher found Lizardz at index 54 for regex Lizard[sz] with Should I name my new pet store Happy Lizards or Happy Lizardz?  Matcher found Lizards at index 37 for regex (Lizards)|(Lizardz) with Should I name my new pet store Happy Lizards or Happy Lizardz?  Matcher found Lizardz at index 54 for regex (Lizards)|(Lizardz) with Should I name my new pet store Happy Lizards or Happy Lizardz?  Matcher found Lizards at index 37 for regex (Lizard)s|(Lizard)z with Should I name my new pet store Happy Lizards or Happy Lizardz?  Matcher found Lizardz at index 54 for regex (Lizard)s|(Lizard)z with Should I name my new pet store Happy Lizards or Happy Lizardz?  Matcher found Lizards at index 37 for regex (Lizard[s])|(Lizard[z]) with Should I name my new pet store Happy Lizards or Happy Lizardz?  Matcher found Lizardz at index 54 for regex (Lizard[s])|(Lizard[z]) with Should I name my new pet store Happy Lizards or Happy Lizardz?  Matcher found Lizards at index 37 for regex ((Lizard)[s])|((Lizard)[z]) with Should I name my new pet store Happy Lizards or Happy Lizardz?  Matcher found Lizardz at index 54 for regex ((Lizard)[s])|((Lizard)[z]) with Should I name my new pet store Happy Lizards or Happy Lizardz?  Matcher found my at index 14 for regex (Lizard)[sz]|(my) with Should I name my new pet store Happy Lizards or Happy Lizardz?  Matcher found Lizards at index 37 for regex (Lizard)[sz]|(my) with Should I name my new pet store Happy Lizards or Happy Lizardz?  Matcher found Lizardz at index 54 for regex (Lizard)[sz]|(my) with Should I name my new pet store Happy Lizards or Happy Lizardz? |