Coding_Problem

In this problem we provide two arrays of strings as the input. Those inputs are the patterns representing the colours used in the necklace by the lowercase alphabets (a-z). Each array contains set of characters followed by the numeric value which indicates the frequencies of the character set.

In our problem the two arrays are pattern1 and pattern 2

Pattern1[]={pqr,2,hy,3,op,1}

Pattern2[]={yo,1,pp,1,qr,1,pqr,1,hy,2,h,1}

Index	0	1	2	3	4	5
Value	pqr	2	hy	3	op	1

In Pattern1 array, as observations the odd places are numeric value if we consider start index as 0. That numeric value indicates the frequency of previous character set and actual representation of the pattern is made using those numeric values.

Code Snippet:

```
for(int i=0;i<pattern.length;i++)        //iteration for number of elements in array
{
        if(i%2!=0)      //checks for odd place
        {
                j=Integer.parse.Int(pattern[i]);
                //as the numeric value is stored as a string in the array conversion is needed
                while(j!=0)
                {
                        str=str+pattern[i-1];
                        j--;
                }
        }
}
```

The string value for pattern1 will be “pqrpqrhyhyhyop” and string value for pattern 2 will be “yoppqrpqrhyhyh” which is the actual representation of the necklace.

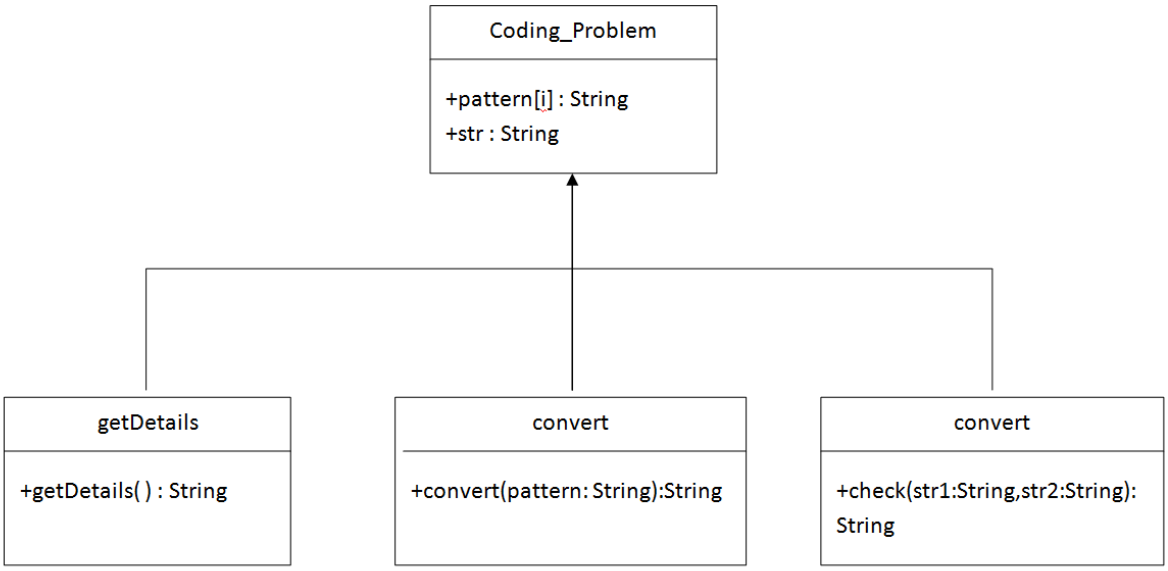
The next task is to compare the two patterns of the necklace and return “True” if they are same otherwise return “False”. For comparison of two strings we first compare the length of those strings, if they are not equal we return “False” and terminate the program. Otherwise we check the last three characters of the first string and first three characters of the second string, if they are same then we will return “True” otherwise “False”.

Code Snippet:

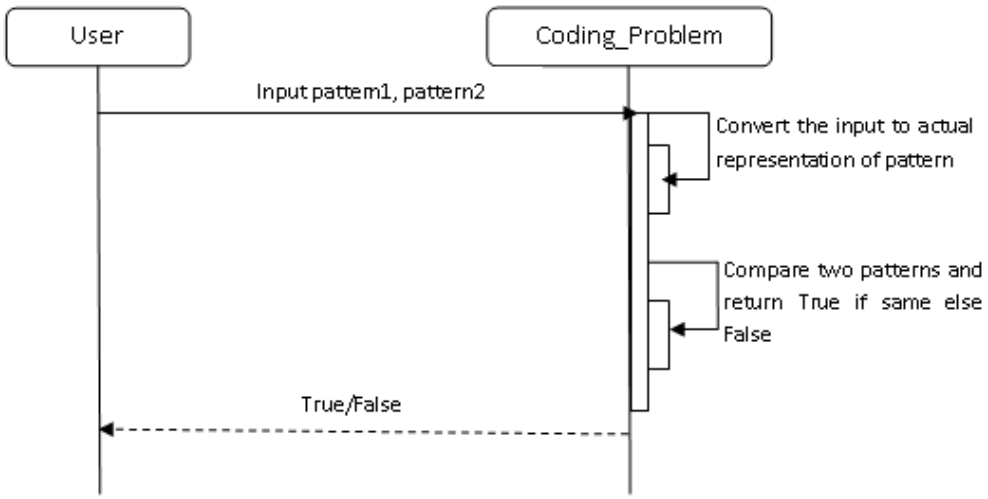
```
if(str1.length()==str2.length())
{
        if((str.substring(str1.length()-3,str1.length())) .equals(str2.substring(0,3)))
        {
                return “True”;
        }
        return “False”;
}
```

UML Diagrams:

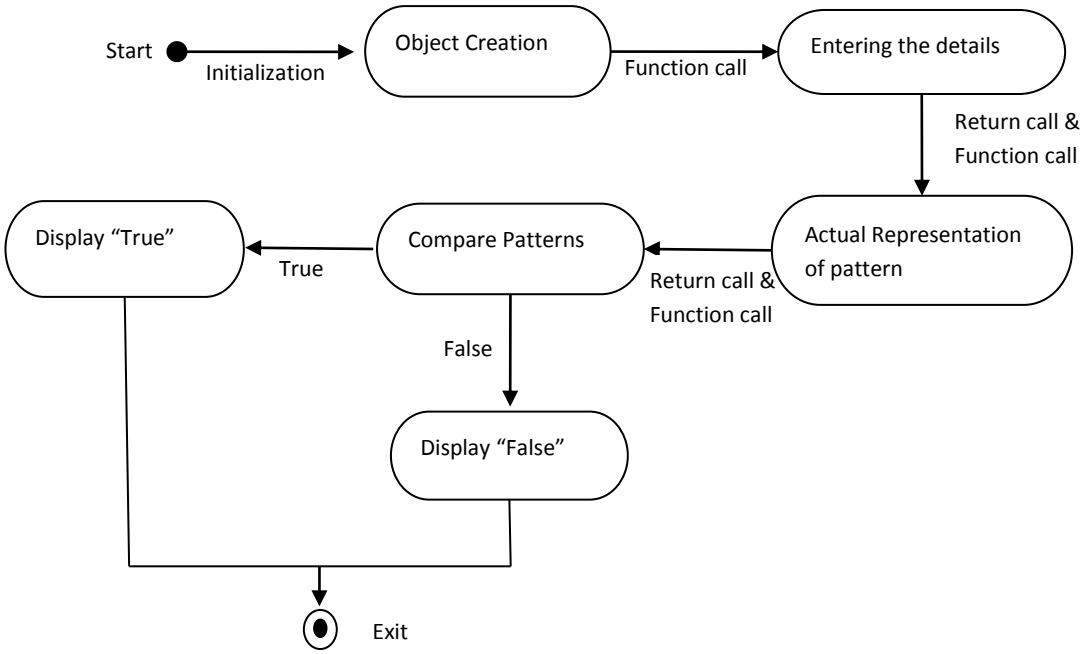
1. Class Diagram



2. Sequence Diagram



3. State Diagram



Test Cases

S.No	Pre Condition	Step Description	Test Data	Expected Result
1	The values entered are stored as string	Enter the values	Number of values entered are of specified size	Values stored successfully
2	Values are the combination of string and numeric value to represent the pattern	The values should be character set followed by numeric value	If entered in specified order	Result is "True"
			If not entered in order	Result is "False"
3	-	Comparison of two patterns	If length of two strings are equal	Proceed for next comparison
			If length of two strings are not equal	Return "False"
4	-	The last three characters and first three characters are compared	If they are same	Return "True"
			If they are not same	Return "False