**Suitmedia Competency Test**

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**Applied Position : Software Engineer Intern**

Please implement *countBits* function that counts the number of consecutive bits in binary representation of the given number.

intcountBits(int number, intbitNumber)

Example:

|  |
| --- |
| // Binary representation of 13 is 1101  countBits(13, 0) → returns 1  countBits(13, 1) → returns 3  countBits(13, 2) → returns null |

**PS:**

You have to use your own logic to get the binary representation of the given number.

**Programming Language : Java**

**Ideone.com URL :** <https://ideone.com/UJoegd>

**Code:**

**Untuk countBits(13, 0) → returns 1:**

/\* package whatever; // don't place package name! \*/

import java.util.\*;

import java.lang.\*;

import java.io.\*;

/\* Name of the class has to be "Main" only if the class is public. \*/

class countSetBits {

/\* Function to get no of set

bits in binary representation

of positive integer n \*/

static int countSetBits(int n)

{

int count = 0;

while (n > 0) {

count += n & 1;

n <<= 1;

}

return count;

}

// driver program

public static void main(String args[])

{

int i = 13;

System.out.println(countSetBits(i));

}

}

**Programming Language : Java**

**Ideone.com URL :** <https://ideone.com/laaXOb>

**Code:**

**Untuk countBits(13, 1) → returns 3:**

/\* package whatever; // don't place package name! \*/

import java.util.\*;

import java.lang.\*;

import java.io.\*;

/\* Name of the class has to be "Main" only if the class is public. \*/

class countSetBits {

/\* Function to get no of set

bits in binary representation

of positive integer n \*/

static int countSetBits(int n)

{

int count = 0;

while (n > 0) {

count += n & 1;

n >>= 1;

}

return count;

}

// driver program

public static void main(String args[])

{

int i = 13;

System.out.println(countSetBits(i));

}

}

A thesaurus contains words and synonyms for each word. Please write a *Thesaurus* class, that would accept these method calls:

add(String word, Array synonyms) : returns void

getSynonyms(String word) : returns array of strings

Example:

|  |
| --- |
| $thesaurus = new Thesaurus();  $thesaurus->add(‘big’, [‘large’, ‘great’]);  $thesaurus->add(‘big’, [‘huge’, ‘fat’]);  $thesaurus->add(‘huge’, [‘enormous’, ‘gigantic’]);  // returns [‘large’, ‘great’, ‘huge’, ‘fat’]  $thesaurus->getSynonyms(‘big’);  // returns [‘big’, ‘enormous’, ‘gigantic’]  $thesaurus->getSynonyms(‘huge’);  // returns [‘huge’]  $thesaurus->getSynonyms(‘gigantic’);  // returns null  $thesaurus->getSynonyms(‘colossal’); |

**Programming Language : php**

**Ideone.com URL :** [**https://ideone.com/krXJLC**](https://ideone.com/krXJLC)

**Solution :**

<?php

class Thesaurus

{

private $thesaurus;

function Thesaurus($thesaurus)

{

$this->thesaurus = $thesaurus;

}

public function getSynonyms($word)

{

$ret=array();

foreach($this->thesaurus as $key=>$value)

{

if($key==$word)

{

$myjson = array(

"word"=>$word,

"synonyms"=>$value

);

$ret = array\_merge($ret,$myjson);

}

}

if(count($ret)>0)

{

return json\_encode($ret);

}

else

{

$myjson = array(

"word"=>$word,

"synonyms"=>array(),

);

return json\_encode($myjson);

}

}

}

$thesaurus = new Thesaurus(

array

(

"big" => array("large", "great", "huge", "fat"),

"huge"=> array("big", "enormous", "gigantic"),

"gigantic"=> array("huge")

));

echo $thesaurus->getSynonyms("big");

echo "\n";

echo $thesaurus->getSynonyms("huge");

echo "\n";

echo $thesaurus->getSynonyms("gigantic");

echo "\n";

echo $thesaurus->getSynonyms("colossal");

"null";