Algorithm Challenge

Problem Definition

A gozinta chain for *n i*s a sequence *{1,a,b,...,n}* where each element properly divides the next. There are eight gozinta chains for 12:

{1,12} ,{1,2,12}, {1,2,4,12}, {1,2,6,12}, {1,3,12}, {1,3,6,12}, {1,4,12} and {1,6,12}.

Let g(n) be the number of gozinta chains for n, so g(12)=8. g(48)=48 and g(120)=132.

Please write an algorithm that finds the gozinta chains for a given number n and also g(n).

- You can use any UI you want to display the gozinta chains.
- Make your algorithm comply with O(n) complexity.

Input: **n:** long>0

Output: **g(n):** long >0

chain: Collection of gozinta chains for **n** (Structure of your choice).

Project Setup

1. Configure your enviroment setup according to Java Environment Setup
2. Clone the repository:

   ```
   git clone https://[user]@bitbucket.endava.com/scm/bd/java-rampup.git
   ```

3. Create a new branch for your challenge:

   ```
   git checkout -b [endavauser]-algorithmic-challenge
   ```

4. Import the **api-challenge** gradle project as is described in IntelliJ Import Project.
5. Push your changes when you finish:

   ```
   git push origin -b [endavauser]-algorithmic-challenge
   ```