14 Drawing Hydrocarbons

6 points

Introduction

Many chemistry lab experiments are focused on hydrocarbon alkanes. These are formed by Carbon-to-Carbon single bonds (C-C) and exist as a continuous chain of Carbon atoms also bonded to Hydrogen atoms.

Methane (CH_4), ethane (C_2H_6), and propane (C_3H_8) are the first three of a series of compounds in which any two members in a sequence differ by one Carbon atom and two Hydrogen atoms—namely, a CH_2 unit. The investigations in the lab will cover up to the first 12 members of hydrocarbon alkanes.

Here is the internal structure of Butane, an alkane having four Carbon atoms (C_4H_{10}):

```
  H H H H
  | | | |
H-C-C-C-C-H
  | | | |
  H H H H
```

Since you are going to perform several experiments, you do not want to spend too much time drawing such structures in your notebook. So you decide to automate the drawings by coding a program that, given the number of Carbon atoms, draws the corresponding hydrocarbon structure. Remember that you only need to consider the first 12 hydrocarbons.

Input

The input is a positive integer representing the number of Carbon atoms in the hydrocarbon to represent.

Output

The structure of the hydrocarbon given the number of C atoms and the corresponding bonds with H atoms.

Example 1

Input

```
1
```

Output

```
  H
  |
H-C-H
  |
  H
```

Example 2

Input

```
4
```

Output

```
  H H H H
  | | | |
H-C-C-C-C-H
  | | | |
  H H H H
```