# 02. Beesy



*Bees are indispensable for maintaining the health of ecosystems, promoting biodiversity, supporting agriculture, and ensuring food availability for human populations worldwide. Protecting bee populations and their habitats is crucial for the well-being of both ecosystems and humanity.*

You will be given an integer **n** for the **size** of the **field** with a **square** shape. On the next **n** lines, you will receive the **rows** of the **field**.

* Your bee will be placed in a **random position**, marked with the letter '**B**'.
* There will be flowers with nectar which need to be pollinated on **random positions**, marked with a **single digit**.
* There will be a **hive**, marked with the letter '**H**'.
* All of the empty **positions** will be marked with **'-'**.

The bee will have **15 units of energy initially**.

A command is received each turn **until the bee runs out of energy** or **reaches the hive**.

the bee must collect and take **at least** **30 units** **of nectar to the hive**. This would be the required quantity to make honey successfully.

Keep in mind that even if the **needed amount of nectar is collected, but the hive is not reached** the **bee continues to move** according to the commands.

You will be given **commands** for **the bee's movement**. The commands will be: "**up**", "**down**", "**left**", and "**right**". The bee moves towards the given direction.With **each** move, the **bee's energy** **decreases** by **1 unit.**

* If the **bee leaves the field** (goes out of the boundaries of the matrix) depending on the move command,  
   **it will be moved to the opposite side of the field.**   
  **Example:** In a 3x3 matrix the bee is at position **[1,2]** and receives the command "**right**" it will be moved to position **[1,0]**.
* If the bee **moves** to a **flower** (a position **marked** with a **digit**), it collects the nectar (**the value of the digit is** **added** to the **total amount of collected nectar**) the **flower disappears** and should be replaced by **'-'**.
* If the bee **runs out of energy**, **and** the **total amount of collected nectar** **is less than 30 units,** the **program ends**. [The correct output should be printed on the Console](#Output).
* If the bee **runs out of energy** **and** the **total amount of collected** **nectar is at least 30 units**, the energy will be restored with the **amount of the difference** between the nectar **collected up to this turn** and the **minimum required** amount for making honey *(30).* The **value of the collected nectar is dropped to 30 units**. The energy **can be restored only once**.

**Example:** Collected nectar is equal to **40 units.** 40 – 30 = **10**. The bee's energy is **increased** by 10, the nectar is decreased to 30 units.

**Hint: Check for zero energy after restoration.**

* + The **next time the bee runs out of energy**, the movement discontinues.The **program ends**.   
    [The correct output should be printed on the Console](#Output).
* If the bee **reaches a position**, **marked with**  '**H**', the hive is reached and the **program ends**.

**Hint: When reaching the hive with zero energy, the success will depend on the amount of the collected nectar.**  
[The correct output should be printed on the Console](#Output).

## Input

* On the first line, you are given the integer **n** – the size of the **square** **matrix**.
* The **next n lines** contain the values for **every matrix row**.
* After that, you will get **commands to move** (each one on a new line).

## Output

* On the first line:
* If the bee **reaches the hive** with at least **30 units of nectar collected**, print this message and stop the program:
* **"Great job, Beesy! The hive is full. Energy left: {energy}"**
* If the bee **reaches the hive** but **has not succeeded in collecting at least 30 units** of nectar:
* **"Beesy did not manage to collect enough nectar."**
* If the **bee runs out of energy**, **before returning** to the hive:
* **"This is the end! Beesy ran out of energy."**
* On the **next** lines.
* Print the **final state of the** **matrix**, **with** **the last known position of the bee**, **marked with 'B'**.

## Constraints

* The size of the **square** matrix *(field)* will be between **[2…10].**
* Only the letters '**B**' and '**H**' will be present in the matrix.
* The **flowers with nectar** are represented by **single positive digits** between **[0…9]**.
* There will always be **enough** commands to finish the program.
* The bee will always have **15 units of energy initially**.

## Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| 5  --B--  H-987  -4812  5----  2----  down  right  right  down  left  left  left  down  left  up  up  up | Great job, Beesy! The hive is full. Energy left: 4  -----  B----  -----  -----  2---- |
| **Comment** | |
| The bee starts from the **position [0,2]**. The first command is **"down"**. The bee moves to **position** **[1,2]** and gets **9** units of nectar. The initial **energy drops to 14 units**. The next command is **"right" -> position [1,3]** gets **8 units of nectar, and the energy drops to 13 units.** Then the command **"right"** again, **position ->** **[1,4]** and **nectar -> 17 + 7**, **energy -> 12.** The next commands are **"down", "left","left",** and **"left" ->** and the bee collects accordingly **2,1,8** and **4** units of nectar. Position -> [2,1], Nectar -> 24 + 2 + 1 + 8 + 4 = 39, Energy -> 8.  Then **"down"** and **"left"** commands follow and your bee adds another **5** units of nectar to the previous amount. Finally, we get a command **"up"** three times, but **the bee steps on the letter 'H'** and that means it has reached the hive successfully collecting **44 units** of nectar.  Position -> [1,0], Nectar -> 39 + 5 = 44, Energy -> 4. | |
| **Input** | **Output** |
| 4  B999  --5-  ---H  ----  right  right  right  down  left  left  left  left  down | Great job, Beesy! The hive is full. Energy left: 6  ----  ----  ---B  ---- |
| **Comment** | |
| The bee starts its movement following the given commands – three times **"right"** and collects the digits *(amounts of nectar)* -> **9+9+9 =27**. Next is a **"down"** command followed by four **"left"** commands *(collects another* ***5*** *units of nectar on the second* ***"left"*** *command)* on the **fourth** left command the bee **leaves** the field boundaries and then **appears** on the **opposite** side of the field **[1,3].** Finally, the bee gets the **"down"** command to reach the hive and the program ends with **32** units of nectar collected. | |
| **Input** | **Output** |
| 4  B---  1991  ----  ---H  down  right  right  right  down  down  left | Beesy did not manage to collect enough nectar.  ----  ----  ----  ---B |
| **Input** | **Output** |
| 6  B-----  111111  ------  111111  ------  H-----  down  right  right  right  right  right  down  left  left  left  left  left  down  right  right  right  right  right | This is the end! Beesy ran out of energy.  ------  ------  ------  --B111  ------  H----- |