SPACE QUERY

Today is the day when ISRO launches a orbiter to Mars but they have a slight problem. They have lost the password of the file that contains the launch codes for the orbiter. You are one of the best decrypters in ISRO so they have given you the task to decrypt the launch codes file. ISRO knows the steps needed to decrypt the file but they need you for writing an efficient program to perform the steps. Initially you are given an array of ***N*** integers and you have to perform ***Q*** operations on that array. Each operation consists of adding a number D to each element of the array within the range ***A*** and ***B*** (both ***A*** and ***B*** are included and are the indexes of the array).The final state of the array is the password required to decrypt the file.

Input:-

- The first line consists of the number of test cases ***T***.
- The next line contains 2 space separated integers ***N*** and ***Q***.
- The next line consists of ***N*** space separated integers denoting the initial array.
- The next Q lines consists of 3 space separated integers ***A***,***B***,***D*** where ***A*** and ***B*** denote the range and ***D*** denotes the number to be added

Output:-

- Print a single line consisting of ***N*** space separated integers which denotes the final state of the array.

Constraints:-

- $1 \leq \boldsymbol{T} \leq 500$
- $1 \leq \boldsymbol{N} \leq 10^5$
- $1 \leq \boldsymbol{Q} \leq 10^5$
- $0 \leq \boldsymbol{A} \leq \boldsymbol{B} \leq \boldsymbol{N}\text{-}1$
- $1 \leq \boldsymbol{D} \leq 10^5$

Sample:-

- **Input:-**

1

5 2

1 1 1 1 1

0 3 1

1 4 1

- **Output:-**

2 3 3 3 2

Time Limit:- 1 sec

Author:- Soham Chatterjee