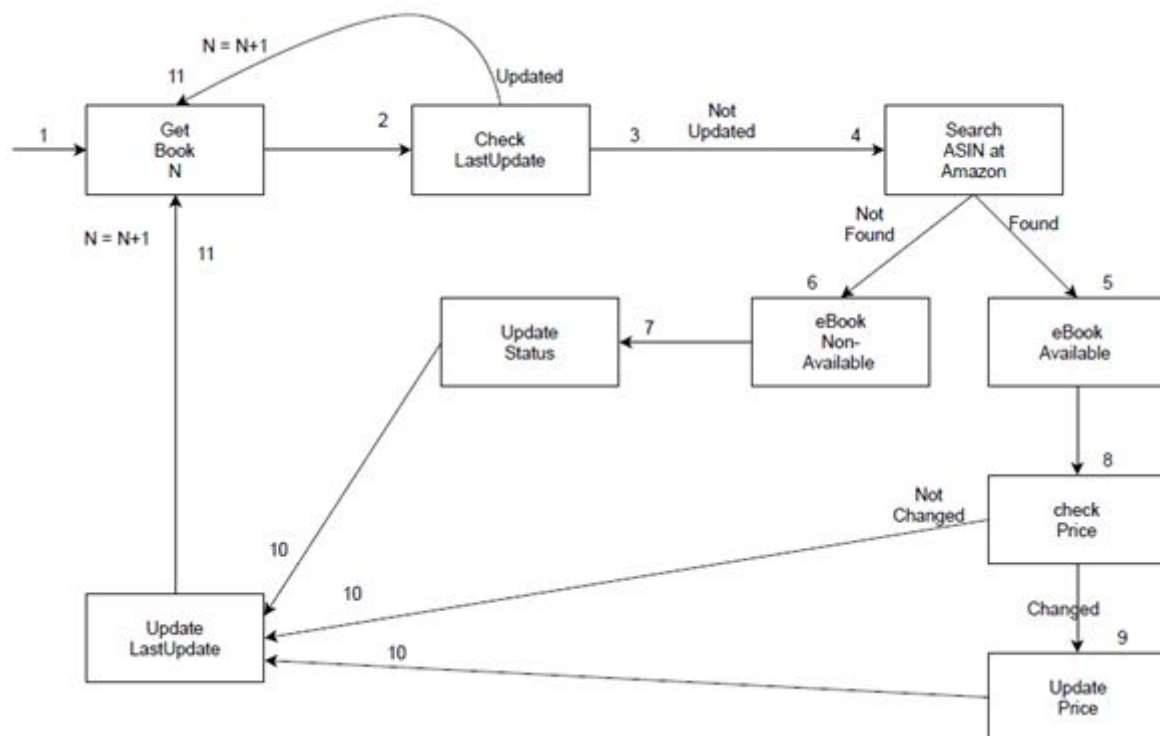**Ex 2- SYSTEM DESIGN DIAGRAM**

Our team requires to keep track of competitor title's prices and ranking on Amazon. The expected information to provide is the following one: Title, Author, Publisher, Publication Date and Ebook format price. Please design a system diagram considering the following constraints and needs:

- **Each Amazon title's information should be updated once per day.**

- **You are provided with an initial list of 100,000 ASINs from competitors.**

<table>
<tr><td>1.</td><td>Launching the keep tracking script daily (Cron)</td></tr>
</table>

Basic Info
Title
Author
Publisher
Publication Date
eBook Format Price
Status
Last Update

1. Launching the keep tracking script daily (Cron)

2. Check if the book has been updated

3. If the book isn't updated it will continue, else it would get the next book to check

4. Search the book at Amazon

5. Book Found

6. Book not found

7. Update the status to unavailable

8. Check the stored price with the Amazon price

9. If the price changed, it will update the stored price

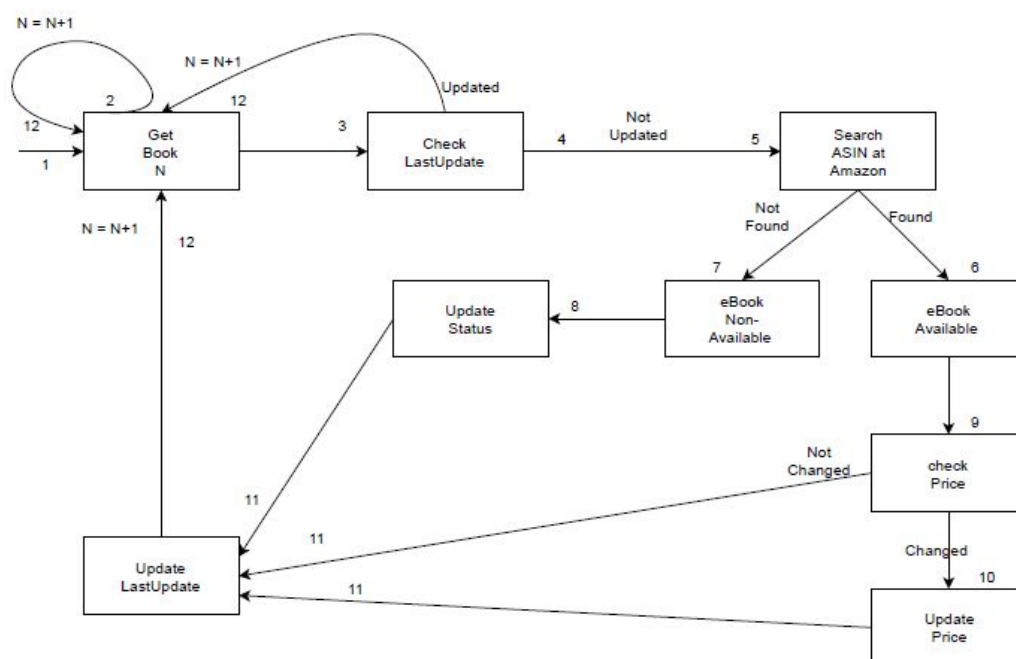10. Update the Last Update data

11. Get the next book to check

- **This list should be grown by crawling Amazon to identify more competitors. For instance, one way to find more competitors would be to scrape the page https://www.amazon.co.uk/Kindle-eBooks-books/b?ie=UTF8&node=341689031. Can you think of any other methods that could provide us with 5-10K more ASIN from the competition?**

Instead of crawling Amazon, It can use Amazon's Product Advertising API for search unknown content from already knew data.

The API function ItemSearch (https://docs.aws.amazon.com/AWSECommerceService/latest/DG/ItemSearch.html) let us search for content with different filters. Returning from an easy way a list of content to add at the database.

- **Assume you have a complete list of our own titles (ASIN) in order to distinguish competitors from our HCP titles.**

In order to facilitate the checking for update, it can add a flag field to the Basic Info or add a check step to the diagram. This way it would avoid do queries of our own info to Amazon.

Basic Info
Title
Author
Publisher
Publication Date
eBook Format Price
Status
Last Update
HCP Title

1. Launching the keep tracking script daily (Cron)

2. Check if the owner of the ASIN. If it's ours, it will pass to the next book.

3. If it isn't ours, check if the book has been updated

4. If the book isn't updated it will continue, else it would get the next book to check

5. Search the book at Amazon

6. Book Found

7. Book not found

8. Update the status to unavailable

9. Check the stored price with the Amazon price

10. If the price changed, it will update the stored price

11. Update the Last Update data

12. Get the next book to check