# Learning App for heap sort.

ヒープソートによる学習アプリ作成

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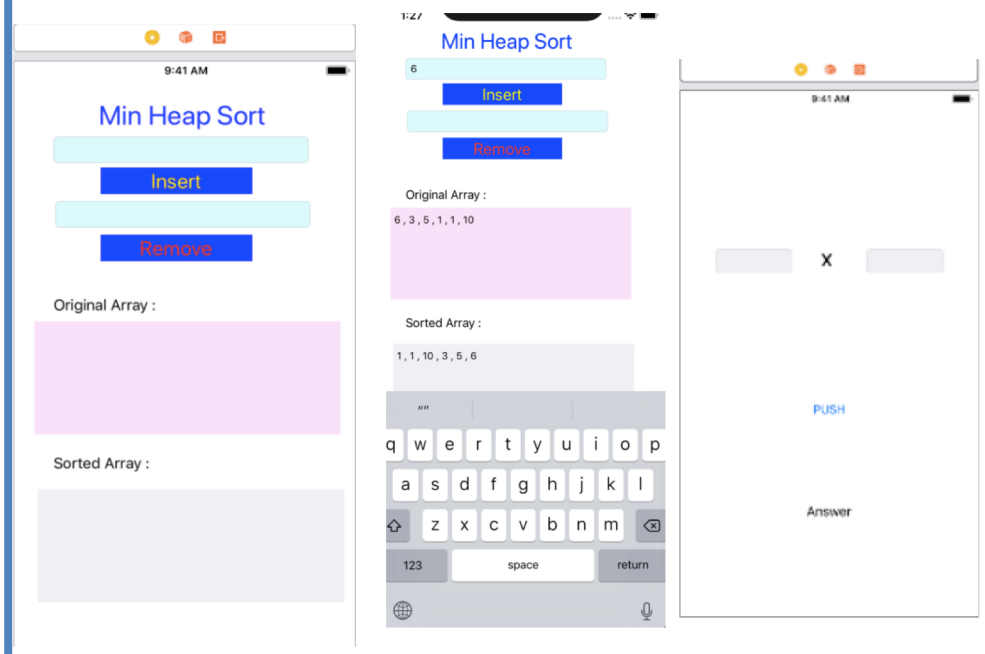
## 1. Introduction

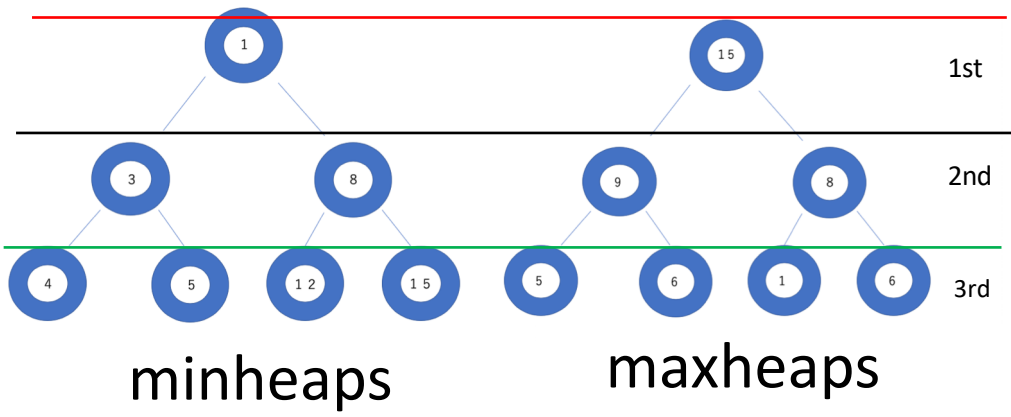
- Today, smartphones are becoming popular and powerful. Smartphones can not only send emails to make phone calls, but also take pictures and watch videos. So I paid attention to it and decided to create a learning app that uses a smartphone. Also, I decided to use xcode and swift, which are familiar with iphone. I decided to make a binary heap app. The binary heap is very easy to understand visually, and it's also a great learning experience for me. I will implement the minimum heap and the maximum heap. I first made a simple calculator app to understand how to use xcode
- The goal of this study is to create an iOS app that implements heap sorting. At the moment I'm making a minimum binary heap app. This app is an application that first inputs an element into an array and then uses that element as the minimum heap. The image below is the app screen.



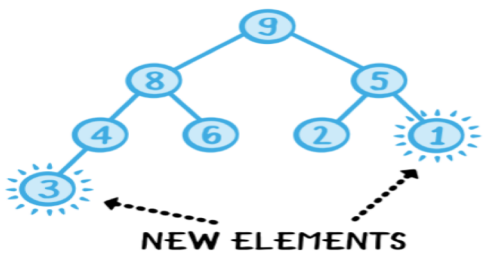

## 2. Tool and Methodoly

Use the following tools in my project:
Xcode is an IDE that provides all the functions.
I need to create great apps for Apple products.
Swift is a programming language that can be used on iOS, mac OS, and Linux.

Binary heap sort is a common sorting algorithm as shown in 1st.
**maxheaps**: Elements with a higher value represent higher priority.
**minheaps**: Elements with a lower value represent higher priority.
The heap also has a compact height. If you think of the heap as having levels, like this:




Whenever we add nodes to a heap, we add them in the leftmost possible position in the incomplete level.




## 3. Conclusion and Future Work

Implements a maximum heap and a minimum heap.
In the future, the layout will be easy to understand visually using animation.

## References

[1] Authors, "Paper title," IEEE Trans. on Computer, vol. 11, no. 4, pp. nn–mm, April 2016.
[2] author a, and author b, " …," ….