

## Introduction

In this experiment, we learnt how to use Node-Red and completed all the procedures including the bonus section. Our answers and all snapshots of the experiment are shown below. In addition, we have put the exported json file of Node-Red in the package.

### Q1. Take a snapshot of the Debug output. How much is the msg.-payload:number? How is this number relevant to the current date?

```
9/22/2023, 1:40:57 AM node: debug 1  
msg.payload : number  
1695361257850
```

Figure 1: a snapshot of the Debug output

The “msg.payload:number” is 1695361257850. Generally, this is the number of milliseconds passed from Jan 1st, 1970, which the exact very starting time is midnight UTC on 1 January 1970 and the number will increase by 1 for every non-leap millisecond after this or decrease by 1 for every non-leap millisecond before this.

In addition, this way of time recording originated from Unix which is the system time of Unix. Unix is a kind of computer operating system created in 1969. Since the limited word length of the early computer system, the Unix epoch was set at the time mentioned above. Finally, it has been widely used in other computer systems.

### Q2. Take a snapshot of your result and paste it here. The number would be the number of seconds passed from the beginning of 1970.

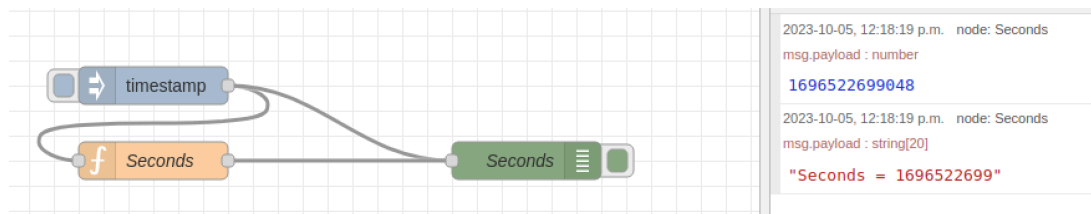


Figure 2: a snapshot of the Debug output

## Snapshots of the experiment outcomes

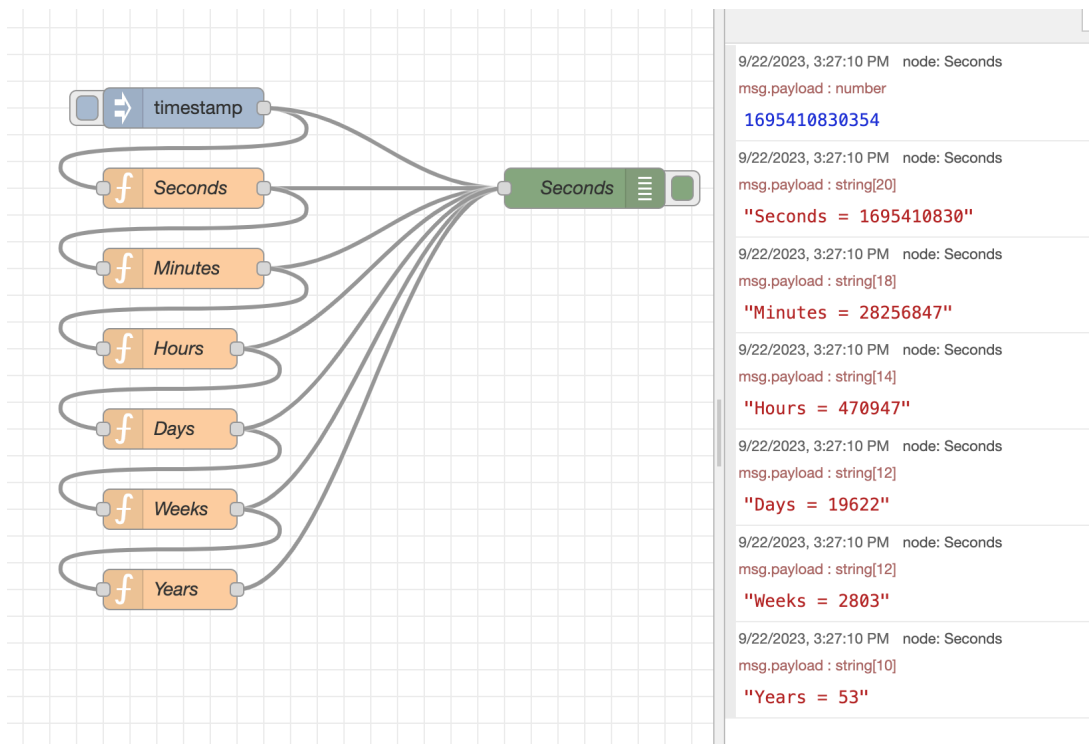


Figure 3: a snapshot of the Debug output

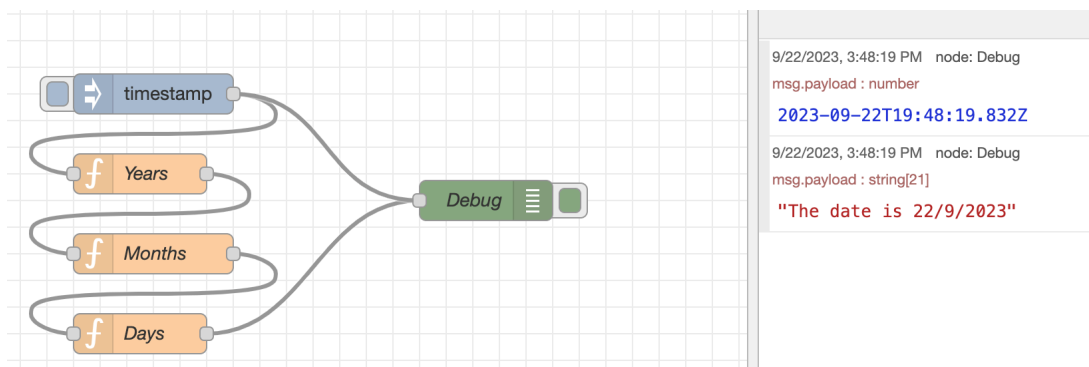


Figure 4: a snapshot of the Debug output

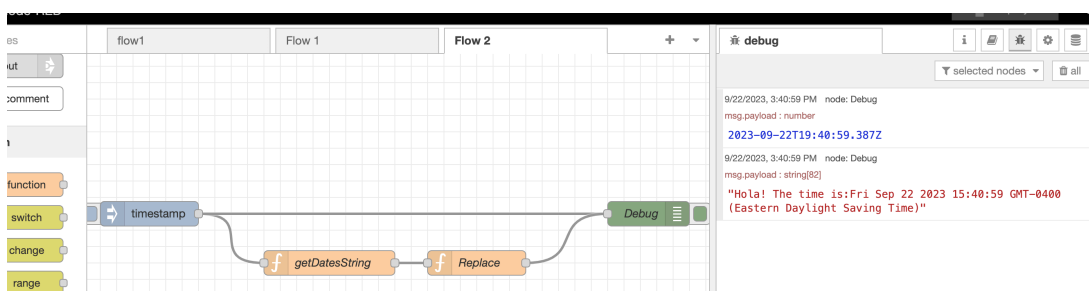


Figure 5: a snapshot of the Debug output

## Reference

- [1] Lab\_Booklet\_V3.pdf
- [2] [https://en.wikipedia.org/wiki/Unix\\_time](https://en.wikipedia.org/wiki/Unix_time)