EE101 C programming and SW engineering 1
Lab Practice 11 – Structures

Use your preferred compiler to investigate the programming exercises below. This laboratory concerns the use and manipulation of structures.

Exercise 1

Define a structure type, **struct** personal that would contain person name, date of starting a job and salary. Using this structure, write a C program to read this information for one person from the keyboard and print the same on the screen.

Example: Data Output

Mary White

12 January 1987

1324.345

Exercise 2

Write a structure type, **struct** PayRecord that can contain: staff ID no., person name and pay rate. Then define an array called employee that consists of 5 elements. Each element is defined to be of the type **struct** PayRecord. Using these, write a C program which displays the five employee elements/records as follows:

1234	Mary White	32.775675
2234	Peter Pan	342.767
666	John Big	232.567
72	Paul Small	132.1345
1234	Mary Black	932.234

Hints: You can initialise the structure variables with values of your choice.

Exercise 3

Analyse and explain in detail the following C program.

```
#include<stdio.h>

struct Employee{
        int idNum;
        double payRate;
        double hours;
        };

double calcNet(struct Employee);

int main(){
struct Employee emp = {6768, 8.93, 40.5};
double netpay;
netpay = calcNet(emp);
printf("The net pay of employee %d is RMB %6.2f\n", emp.idNum, netpay);
return 0;
}

double calcNet(struct Employee temp){
        return (temp.payRate*temp.hours);
        }
```

Exercise 4

Rewrite the C program in Exercise 3 by passing a structure's address and using a pointer to access the structure.