Assignment 9: Structures

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1. Implement struct to store the ISBN number, Title and price of n Books and display them.

```c
// Q1
#include <stdio.h>
struct books{
        long long int ISBN;
        char title[100];
        float price;
    };
int main(){
    int n, i=0;
    printf("Enter the no. of books to store - ");
    scanf("%d", &n);
    struct books book[n];
    for(i=0;i<n;i++){
        printf("ISBN No. - ");
        scanf("%lld", &book[i].ISBN);
        printf("Price - ");
        scanf("%f", &book[i].price);
        printf("Title - ");
        scanf("%s", book[i].title);
    }
    printf("\n\n");
    for(i=0;i<n;i++){
        printf("ISBN No. - %lld\n", book[i].ISBN);
        printf("Title - %s\n", book[i].title);
        printf("Price - %f\n--------------------\n", book[i].price);
    }
}
```

```
Enter the no. of books to store - 2
ISBN No. - 5324
Price - 45
Title - Do
ISBN No. - 4352
Price - 23
Title - It


ISBN No. - 5324
Title - Do
Price - 45.000000
--------------------
ISBN No. - 4352
Title - It
Price - 23.000000
--------------------
```

2. Create a Structure named item that has members namely, item_name, Quantity, price and amount. Implement a user-defined function that takes read item_name, quantity and price as input and calculate amount= quantity * price and print the same as output.

```c
// Q2
#include <stdio.h>
struct items{
    char item_name[100];
    int quantity;
    float price;
    float amount;
};

void itemAmount(struct items item[], int n){
    int i = 0;
    for(i =0; i<n;i++){
        printf("\nItem name - %s\n", item[i].item_name);
        printf("Quantity - %d\n", item[i].quantity);
        printf("Price - %f\n", item[i].price);
        printf("Amount - %f\n----------------\n",
item[i].quantity*item[i].price);
    }
}

int main(){
    int n, i=0;
    printf("Enter the no. of items - ");
    scanf("%d", &n);
    struct items item[n];
    for(i =0; i<n;i++){
        printf("Item name - ");
        scanf("%s", item[i].item_name);
        printf("Quantity - ");
        scanf("%d", &item[i].quantity);
        printf("Price - ");
        scanf("%f", &item[i].price);
        printf("\n------------\n");
    }
    printf("\n----------Result----------\n");
    itemAmount(item, n);
}
```

```
Enter the no. of items - 2
Item name - erge
Quantity - 23432
Price - 24

-------------
Item name - ergq
Quantity - 23534
Price - 34

-------------

----------Result----------

Item name - erge
Quantity - 23432
Price - 24.000000
Amount - 562368.000000
-----------------

Item name - ergq
Quantity - 23534
Price - 34.000000
Amount - 800156.000000
-----------------
```

3. Create a structure Time with seconds, minutes and hours. Take inputs from the user and calculate the time difference between two time periods using a user-defined function.

```c
// Q3
#include <stdio.h>
struct Time{
    int seconds;
    int minutes;
    int hours;
};

void timeDiff(struct Time t[]){
    int diff=0, H, M, S;
    diff = (t[1].hours*60 - t[0].hours*60 + t[1].minutes - t[0].minutes)*60 +
t[1].seconds - t[0].seconds;
    if (diff <0){
        diff = diff*(-1);
    }
    H = diff/3600;
    M = (diff - H*3600)/60;
    S = diff - M*60 - H*3600;
```

```
    printf("Time difference is %d hr %d min %d s", H, M, S);
}

int main(){
    struct Time t[2];
    printf("\nAbout the START time:\n");
    printf("Hours - ");
    scanf("%d", &t[0].hours);
    printf("Minutes - ");
    scanf("%d", &t[0].minutes);
    printf("Seconds - ");
    scanf("%d", &t[0].seconds);

    printf("\nAbout the END time:\n");
    printf("Hours - ");
    scanf("%d", &t[1].hours);
    printf("Minutes - ");
    scanf("%d", &t[1].minutes);
    printf("Seconds - ");
    scanf("%d", &t[1].seconds);
    timeDiff(t);
}
```

```
About the START time:
Hours - 1
Minutes - 24
Seconds - 45

About the END time:
Hours - 1
Minutes - 3
Seconds - 1
Time difference is 0 hr 21 min 44 s⏎
```