Bit Fields in Union and Structure assignments

1. You need to store the status of traffic light i.e status of Red, Green, Organge Bulb On/Off status. Define an appropriate data structure for this .

Sol:

```c
#include <stdio.h>

#include <stdbool.h>

typedef struct {

    bool red;

    bool green;

    bool orange;

} TrafficLight;


void displayTrafficLightStatus(TrafficLight t) {

    printf("Traffic Light Status:\n");

    printf("Red: %s\n", t.red ? "On" : "Off");

    printf("Green: %s\n", t.green ? "On" : "Off");

    printf("Orange: %s\n", t.orange ? "On" : "Off");

}


int main() {

    TrafficLight trafficLight = {true, false, false};

    displayTrafficLightStatus(trafficLight);

return 0;

}
```

Output:

```
user57@trainux01:~/Batch17OCT2024/struc$ vi struct2.c
user57@trainux01:~/Batch17OCT2024/struc$ gcc struct2.c
user57@trainux01:~/Batch17OCT2024/struc$ ./a.out
Traffic Light Status:
Red: On
Green: Off
```

2. Define an appropriate data structure to store Person details namely name [max length 100 bytes], age (considering person living for 100 years).

```c
#include <stdio.h>

typedef struct {

    char name[100];

    int age;

} Person;

void displayPersonDetails(Person p) {

    printf("Person Details:\n");

    printf("Name: %s\n", p.name);

    printf("Age: %d\n", p.age);

}

int main() {

     Person person = {"John Doe", 25};

    displayPersonDetails(person);

    return 0;

}
```

Output:

```
user57@trainux01:~/Batch17OCT2024/struc$ vi struct1.c
user57@trainux01:~/Batch17OCT2024/struc$ gcc struct1.c
user57@trainux01:~/Batch17OCT2024/struc$ ./a.out
Person Details:
Name: John Doe
Age: 25
```