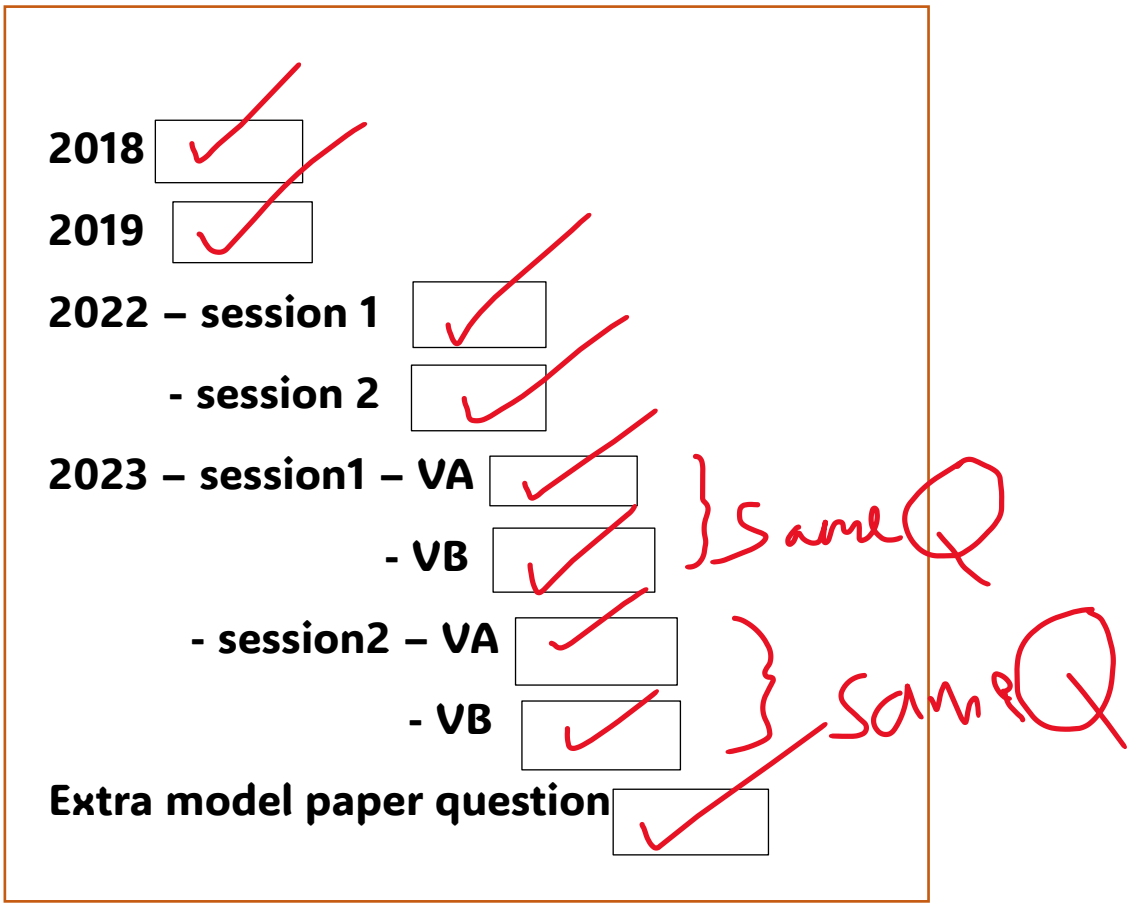
Functions past paper questions



2018

Question 3 **30 Marks**

The "On the Go" family super market is giving discounts for their customers who shop between 16:00 to 22:00 hrs. The discounts are given according to the time and the amount they spend at the shop. The discount percentages are shown in the following table.

Time (24 Hrs)	Total amount > =5000	5000 >Total amount >= 2500
16:00 to 19:00	10%	7%
20:00 to 22:00	12%	9%

a) Write a function called `calDiscount( )` to calculate the discount given for a transaction by sending the time as and integer (eg : between 16:00 to 16:59 enter only 16) and the total amount as parameters.

```
float calDiscount (int time, float totAmount)
```

b) Write a function called `testCalDiscount( )` which contains two assert statements to debug the above implemented function.

The supermarket has also decided to give a free gift for the customers according to the amount after deducting the discount. The table below shows the criteria for the gifts.

Final Amount(after discount)	Gift
>=7,000	Packet of Milk
5000 – 6999	1 kg of Sugar
3000 - 4999	Pack of 6 Eggs

c) Write a function called `displayGift( )` to display the gifts obtained by each customer.

```
void displayGift(float finalTot)
```

d) In your main program do the following :

i. Call the `testCalDiscount( )` function.

ii. Input the time and the total amount from keyboard. If the user enters an invalid time then display an error message. Display the final amount(after discount) and the gift obtained using the two functions implemented in part a) and part c).

Save your program as 1AJune3.c

```c
#include <stdio.h>
#include <assert.h>

float calDiscount(int time, float totAmount);
void displayGift(float finalTot);

void testCalDiscount(){

    // Test case 1: Verify the discount calculation for time 17 and total amount 6000
    assert(calDiscount(17, 6000) == 600.0);

    // Test case 2: Verify the discount calculation for time 21 and total amount 3500
    assert (calDiscount(21, 3500) == 315.0);

}

int main(){

    int time;
    int totAmount;

    printf("Input time: ");
    scanf("%d", &time);

    if (time < 16 || time > 22){
        printf("Error!\n");
        return 1;
    }

    printf("Input total amount : ");
    scanf("%d", &totAmount);

    testCalDiscount();

    float discount = calDiscount(time, totAmount);
    float finalTot = totAmount - discount;

    printf("Final amount(after discount): %.2f\n", finalTot);

    displayGift(finalTot);

    return 0;
}

    float calDiscount(int time, float totAmount){

        float discount = 0.0;

        if(time >= 16 && time <= 19 ){
            if(totAmount >= 5000){
                discount = totAmount * 0.1;
            }
            else if (totAmount < 5000 && totAmount >= 2500){
                discount = totAmount * 0.07;
            }
        }
        else if(time >= 20 && time <= 22){
            if(totAmount >= 5000){
                discount = totAmount * 0.12;
            }
            else if (totAmount < 5000 && totAmount >= 2500){
                discount = totAmount * 0.09;
            }
        }
        else {
            discount = 0.0;
        }

        return discount;
    }

    void displayGift(float finalTot){

        if(finalTot >= 7000){
            printf("Packet of Milk\n");
        }
        else if(finalTot >=5000 && finalTot <= 6999){
            printf("1kg of Sugar");
        }
        else if(finalTot >= 3000 && finalTot <= 4999){
            printf("Pack of 6 Eggs");

        }else{
            printf( "No gift" );
        }

    }
```

2019

Question 3 **(30 marks)**

Write a C program to find out the amount you earn after investing money on a trust fund for a given period.

a) Write a function called `calcAnnualInterest()` to calculate the interest amount the customer gets at the end of the year when the annual interest rate and the amount is passed as parameters. If the amount is above Rs. 1,000,000.00, an additional 0.5% is added to the interest rate.

```
float calcAnnualInterest(float interestRate, float amount);
```

interest = amount * interest rate /100

b) Write a function called `findTotalAmount()` to return the total amount saved at the end of the year.

```
float findTotalAmount(float interestRate, float amount);
```

Hint: Total amount = interest + amount
Use calcAnnualInterest function to find out the interest earned.

c) Write a function called `testTotalAmount()` which contains two assert statements to check the function implemented in section b) above.

```
void testTotalAmount();
```

d) In your main function,
   i) Call `testTotalAmount()` function
   ii) Input the amount to be invested and the annual interest rate from the keyboard.
   iii) Customer is planning to invest the amount compounded yearly at the given interest rate for five years.
   i.e. (Amount + interest) is invested for the next year.

Display the total amount earned at the end of each year using the above functions.

Sample output is given below.

```
Enter Initial Amount to be invested       : 10000.00
Enter Annual interest Rate(in percentage) : 10
```



```
Amount after year 1 :  11000.00
Amount after year 2 :  12100.00
Amount after year 3 :  13310.00
……
……
```

Save your program as 1AQ3.c

```c
#include <stdio.h>
#include<assert.h>

float calcAnnualInterest(float interestRate , float amount);
float findTotalAmount(float interestRate , float amount);

void testTotalAmount(){
    assert(findTotalAmount(10,10000) == 11000);
    assert(findTotalAmount(20,20000) == 24000);
}

int main(){

    float amount;
    int interestRate;
    int year;
    int years;


    printf("Enter initial amount: ");
    scanf("%f",&amount);

    printf("Enter Annual interest Rate(in percentage): ");
    scanf("%d",&interestRate);

    printf("Enter the no.of years for total amount has to be calculated: ");
    scanf("%d", &years);

    testTotalAmount();

    for(year = 1; year <= years; year++) {
        float totalAmount = findTotalAmount(interestRate, amount);
        printf("Total amount after year %d: %.2f\n", year, totalAmount);

        // Update the amount for the next year
        amount = totalAmount;
    }

    return 0;
}

float calcAnnualInterest(float interestRate , float amount){

    float interest;

    if (amount > 1000000) {
        interestRate += 0.5;
    }
    interest = amount * (interestRate)/100.00;

    return interest;
}

float findTotalAmount(float interestRate , float amount){

    float interest = calcAnnualInterest(interestRate, amount);

    return interest + amount;
}
```

2022- session 1

Question 3 [30 Marks]

A bank has announced new fixed deposit interest rates for different fixed deposit types. The interest is paid annually and the bank deducts a 5% withholding tax on the interest. Write a C program to calculate the interest amount received after deducting the withholding tax by following the below instructions.

Types of fixed deposts available and their interest rates are given below.

Fixed Deposit Type	Description	Annual Interest rate
1	12 months FD	16.0 %
2	24 months FD	15.0 %
3	36 months FD	15.5 %
4	48 months FD	17.5%

i) Write a function called `calcInterest( )` to calculate and return the annual interest paid for the above fixed deposit types. Fixed deposit type and the deposit amount are the parameters of the function. (annual interest = deposit amount * Annual Interest rate)

Function prototype is given below

```
float calcInterest(int FDType,float depositAmount)
```

ii) The bank deducts a 5% withholding tax on the interest. Write a function called `calcTax()` to return the withholding tax amount when the annual interest is passed as a parameter.

Function prototype is given below

```
float calcTax(float annualInterest)
```

iii) Write a function called `dislayDetails()` to display the annual interest, withholding tax amount and the amount payable annually according to below format. (amount payable = annual interest – tax amount)

```
Annual Interest     Tax amount      Amount Payable
-------------------  ---------------  ----------------------
```

Function prototype is given below

```
void displayDetails(float interest, float taxAmount)
```

iv) In your main function,

a. Write two assert statements to test `calcInterest()` function.

b. Allow the user to enter the fixed deposit type and deposit amount from the keyboard. Call function `calcInterest() and calcTax()` in your main function. Display the interest, tax amount and amount payable using `displayDetails()` function. Display the given details accoring to the below format. Allow the user to enter several deposit types and amounts. Stop reading values from the keyboard when user enters -1 as the deposit type.

```
Fixed Deposit Type : .....
Deposit Amount  : .....

Annual Interest     Tax amount      Amount Payable
-------------------  ---------------  ----------------------

Fixed Deposit Type : .....
Deposit Amount  : .....

Annual Interest     Tax amount      Amount Payable
-------------------  ---------------  ----------------------
```

```c
#include <stdio.h>
#include <assert.h>

float calcInterest(int FDType, float depositAmount);
float calcTax(float annualInterest);
void displayDetails(float interest , float taxAmount);

int main(){

    assert(calcInterest(1,1000) == 160);
    assert(calcInterest(3,4000) == 620);

    int fixedDepositType;
    float depositAmount;

    while(fixedDepositType != -1){

        printf("Fixed deposit Type: ");
        scanf("%d",&fixedDepositType);

        if(fixedDepositType == -1){
            break;
        }
        printf("Deposit Amount: ");
        scanf("%f",&depositAmount);

        float annualInterest = calcInterest(fixedDepositType,depositAmount );

        float taxAmount = calcTax(annualInterest);

        displayDetails(annualInterest ,taxAmount);

        printf("%.2f\t\t\t%.2f%\t\t\t%.2f\n", annualInterest, annualInterest- taxAmount, taxAmount );

        printf("\n");
    }

    return 0;

}

float calcInterest(int FDType, float depositAmount){

    switch(FDType){
        case 1:
            return depositAmount * 0.16;
            break;

        case 2:
            return depositAmount * 0.15;
            break;

        case 3:
            return depositAmount * 0.155;
            break;

        case 4:
            return depositAmount * 0.175;
            break;

        default : printf("Invalid!\n");
            break;
    }

}

float calcTax(float annualInterest){

    float tax = annualInterest * 0.05;
    return annualInterest - tax;

}
void displayDetails(float annualInterest , float taxAmount){

    printf("Annual Interest\t\tTax Amount\t\tAmount Payable\n");

}

```

2022- session 2

Question 3 [30 Marks]

Weekly allowed fuel quota and the price of the fuel for four vehicles types are given in the below table.

Vehicle type	Weekly allowed fuel quota (litres)	Fuel price (per litre)
1	5	Rs. 370.00
2	20	Rs. 370.00
3	20	Rs. 510.00
4	30	Rs. 370.00

Write a C program to calculate amount spent for fuel and the remaining fuel quota for the week by following the below instructions.

i) Write a function called `calcRemainingFuel()` to return the available fuel quota for the week. Vehicle type and the used fuel quota are the parameters of the function. (remaining fuel quota = allowed fuel quota – used fuel quota)

Function prototype is given below.

```
float calcRemainingFuel(int vehicleType, float
usedFuelQuota)
```

ii) Write another function called calcFuelCost( ) to return the amount spent on fuel for the week. (fuel cost = used fuel quota * price)

Function prototype is given below.

```
float calcFuelCost(int vehicleType, float
usedFuelQuota)
```

iii) Write a function called `dislayDetails()` to display the vehicle type, used fuel quota, remaining fuel quota and the weekly fuel cost according to below format.

```
Vehicle type   Quota used   Quota Remaining   Fuel Cost
------------   ----------   ---------------   ---------
```

Function prototype is given below

```
    void displayDetails(int vType, float usedFuelQuota, float
remainingQuota, float cost)
```

iv) In your main function,

a. Write two assert statements to test `calcRemainingFuel()` function.

b. Allow the user to enter the vehicle type and used fuel quota from the keyboard. Call function calcRemainingFuel() and calcFuelCost() in your main function. Display the vehicle type , quota used, remaning quota and the weekly fuel cost using displayDetails() function.

The program should allow the user to enter details for several vehicle types. Stop reading values from the keyboard when user enters -1 as the vehicle type.

Save your program as Q3.c

```c
#include <stdio.h>
#include <assert.h>

float calRemainingFuel(int vehicleType, float usedFuelQuota);
float calFuelCost(int vehicleType, float udsedFuelQuota);
void displayDetails(int vType, float usedFuelQuota, float remainingQuota, float cost);

int main(){

    assert(calRemainingFuel(1,3) == 2);
    assert(calRemainingFuel(3,19) == 1);

    // always used the same format specifiers
    int vType;
    float quota;
    float remainingQuota;
    float cost;

    while(vType != -1){
        printf("Enter vehicle type: ");
        scanf("%d", &vType);

    if(vType == -1){
        break;
    }

    printf("Enter used fuel quota: ");
    scanf("%f", &quota);

    calRemainingFuel(vType,quota);

    displayDetails(vType, quota, remainingQuota, cost);

    printf("\n");

    }
    return 0;
}
float calRemainingFuel(int vehicleType, float usedFuelQuota){

    switch(vehicleType){
        case 1:
            return (5 - usedFuelQuota);
            break;

        case 2:
            return (20 - usedFuelQuota);
            break;

        case 3:
            return (20 - usedFuelQuota);
            break;

        case 4:
            return (30 - usedFuelQuota);
            break;

        default : printf("Invalid\n");
            break;

    }
}
```

```c
float calFuelCost(int vehicleType, float usedFuelQuota){

    switch(vehicleType){
        case 1:
            return usedFuelQuota * 370;
            break;

        case 2:
            return usedFuelQuota * 370;
            break;

        case 3:
            return usedFuelQuota * 510;
            break;

        case 4:
            return usedFuelQuota * 370;
            break;

        default : printf("Invalid\n");
            break;

    }

}

void displayDetails(int vType, float usedFuelQuota, float remainingQuota, float cost){

    printf("Vehicle Type\t\tQuota used\t\tQuota Remaining\t\tFuel Cost\n");

    remainingQuota =  calRemainingFuel(vType , usedFuelQuota);
    cost= calFuelCost(vType , usedFuelQuota);

    printf("%d\t\t\t%.2f\t\t\t%.2f\t\t\t%.2f\n", vType,  usedFuelQuota, remainingQuota, cost );

}
```

2023- session 1- VA

Question 3 **30 Marks**

An Internet service provider has announced newly revised charges for their internet packages. Write a C program to calculate the monthly bill payment of the customers.

Type of packages available and their details are given below.

Package Type	Data Bundle (GB)	Monthly Subscription Fee (Rs)	Excess Usage Charge
1	1.5	120	2 Rupees / MB
2	5	350	1.5 Rupees / MB
3	10	660	1 Rupee / MB
4	20	1200	0.5 Rupees / MB

i) Write a function called `calcPayment()` to calculate and return the payment of a customer. The package type and total data usage in GB are the parameters of the function.

(Payment = Excess Usage Charge + Monthly Subscription Fee
Excess data usage = total data usage - Data Bundle
01 GB = 1024 MB)

Function prototype is given below.

```
float calcPayment(int pType, float totalData)
```

ii) The company has decided to include a 5% tax on the payment. Write a function called calcTax() to calculate and return the tax for the payment when the calculated payment is passed as parameter.

Function prototype is given below.

```
float calcTax(float payment)
```

iii) Write a function called displayDetails() to display the payment, tax amount and the monthly bill payment according to the following format.
(Monthly bill payment = Payment + Tax amount)

Payment ..... Tax amount ..... Monthly bill payment .....

Function prototype is given below.

```
void displayDetails(float payment, float tax)
```

iv) In your main function,

a) Write two assert statements to test calcPayment () function.

b) Allow the user to enter package type and total data usage in GB from keyboard. Call function calcPayment() and calcTax() in your main function. Display the payment, tax amount and monthly bill payment using displayDetails( ) function. Allow the user to input the package type and total data usage of 3 customers.

Display the details according to the following format.

Package Type : .....
Total data usage : .....

Payment ..... Tax amount ..... Monthly bill payment .....

Save your program as funA.c

```c
#include <stdio.h>

float calcPayment(int pType, float totalData);
float calcTax(float payment);
void displayDetails(float payment , float tax);

int main(){

    int packageType, i;
    float dataUsage;
    float payment;
    float tax;

    for(i=1; i<=3; i++){
        printf("Package type: ");
        scanf("%d", &packageType);

        printf("Total data usage: ");
        scanf("%f", &dataUsage);


    payment = calcPayment(packageType, dataUsage);
    tax = calcTax(payment);

    displayDetails(payment, tax);

    }

    printf("\n");

    return 0;
}

float calcPayment(int pType, float totalData){

    switch(pType){
        case 1:
            return (((totalData - 1.5)* 2 * 1024.00)  + (120));
            break;

        case 2:
            return (((totalData - 5)* 1.5 * 1024.00)  + (350));
            break;

        case 3:
            return (((10 - 1.5)* 1 * 1024.00)  + (660));
            break;

        case 4:
            return (((totalData - 20)* 0.5 * 1024.00)  + (1200));
            break;

        default: printf("Invalid!");
            return 0;
            break;
    }

}

float calcTax(float payment){

    return  payment * 0.05;

}

void displayDetails(float payment , float tax){

    printf("\nPayment\t\t\tTax Amount\t\tMonthly bill payment\n");
    printf("%.2f\t\t\t%.2f\t\t\t%.2f\n",payment, tax, payment + tax);
    printf("\n\n");
}
```

Same Q as VA

2023- session1 -VB

Question 1 **30 Marks**

An Internet service provider has announced newly revised charges for their internet packages. Write a C program to calculate the monthly bill payment of the customers.

Type of packages available and their details are given below.

Package Type	Data Bundle (GB)	Monthly Subscription Fee (Rs)	Excess Usage Charge
1	1.5	120	2 Rupees / MB
2	5	350	1.5 Rupees / MB
3	10	660	1 Rupee / MB
4	20	1200	0.5 Rupees / MB

i) Write a function called `calcPayment()` to calculate and return the payment of a customer. The package type and total data usage in GB are the parameters of the function.

(Payment = Excess Usage Charge + Monthly Subscription Fee
Excess data usage = total data usage - Data Bundle
01 GB = 1024 MB)

Function prototype is given below.

```
float calcPayment(int pType, float totalData)
```

ii) The company has decided to include a 5% tax on the payment. Write a function called calcTax() to calculate and return the tax for the payment when the calculated payment is passed as parameter.

Function prototype is given below.

```
float calcTax(float payment)
```

iii) Write a function called displayDetails() to display the payment, tax amount and the monthly bill payment according to the following format.
(Monthly bill payment = Payment + Tax amount)

Payment ..... Tax amount ..... Monthly bill payment .....

Function prototype is given below.

```
void displayDetails(float payment, float tax)
```


iv) In your main function,
a) Write two assert statements to test calcPayment () function.
b) Allow the user to enter package type and total data usage in GB from keyboard. Call function calcPayment() and calcTax() in your main function. Display the payment, tax amount and monthly bill payment using displayDetails( ) function. Allow the user to input the package type and total data usage of 3 customers.

Display the details according to the following format.

Package Type : .....
Total data usage : .....

Payment ..... Tax amount ..... Monthly bill payment .....

Save your program as **funB.c**

2023- session 2- VA

Question 3 **30 Marks**

The fertilizer (Urea, T.S.P , M.O.P) recommendation for paddy cultivation is given in the following table according to the age group of the paddy crops. Write a C program to calculate the fertilizer payment of the farmers for their paddy cultivation.

Age group (Weeks)	Urea (kg for Hectare)	T.S.P (kg for Hectare)	M.O.P (kg for Hectare)
0	0	35	0
2	30	0	0
4	65	0	25
6	50	0	25
7	30	0	0

The prices of the fertilizers are mentioned bellow.

Fertilizer	Price of 1 kg
Urea	68/=
T.S.P	60/=
M.O.P	75/=

a) Write a function called `calcPayment()` to calculate and return the fertilizer payment of a farmer. The age of the paddy crops in weeks and the paddy field size in Hectare are the parameters of the function.

Function prototype is given below.

```
float calcPayment(int age, float size)
```

b) The government has decided to reduce 15% of the payment as a subsidy. Write a function called `calcSubsidy()` to calculate and return the subsidy amount when the calculated payment is passed as parameter.

Function prototype is given below.

```
float calcSubsidy(float payment)
```

c) Write a function called `displayDetails()` to display the payable amount and subsidy amount according to the following format.
(Payable amount = Payment - subsidy amount)

Payable amount Subsidy amount

....

Function prototype is given below.

```
void displayDetails(float payment, float subsidy)
```

d) In your main function,
i) Write two assert statements to test `calcPayment ()` function.
ii) Allow the user to enter the age of the paddy crops in weeks and the paddy field size in Hectare from keyboard. Call function `calcPayment()` and `calcSubsidy()` in your main function. Display the payable amount and subsidy amount using `displayDetails()` function. The program should read the details of 3 farmers and perform the calculations.

Display the details according to the following format.

The age of the paddy crops in week : .....
The paddy field size in Hectare : .....

Payable amount Subsidy amount

....

The age of the paddy crops in week : .....
The paddy field size in Hectare : .....

Payable amount Subsidy amount

....

Save your program as **funC.c**

Same as VA

2023- session2- VB

Question 1 **30 Marks**

The fertilizer (Urea, T.S.P , M.O.P) recommendation for paddy cultivation is given in the following table according to the age group of the paddy crops. Write a C program to calculate the fertilizer payment of the farmers for their paddy cultivation.

Age group (Weeks)	Urea (kg for Hectare)	T.S.P (kg for Hectare)	M.O.P (kg for Hectare)
0	0	35	0
2	30	0	0
4	65	0	25
6	50	0	25
7	30	0	0

The prices of the fertilizers are mentioned bellow.

Fertilizer	Price of 1 kg
Urea	68/=
T.S.P	60/=
M.O.P	75/=

a) Write a function called `calcPayment()` to calculate and return the fertilizer payment of a farmer. The age of the paddy crops in weeks and the paddy field size in Hectare are the parameters of the function.

Function prototype is given below.

```
float calcPayment(int age, float size)
```

b) The government has decided to reduce 15% of the payment as a subsidy. Write a function called `calcSubsidy()` to calculate and return the subsidy amount when the calculated payment is passed as parameter.

Function prototype is given below.

```
float calcSubsidy(float payment)
```

c) Write a function called `displayDetails()` to display the payable amount and subsidy amount according to the following format.
(Payable amount = Payment - subsidy amount)

Payable amount Subsidy amount

....

Function prototype is given below.

```
void displayDetails(float payment, float subsidy)
```

d) In your main function,
   i) Write two assert statements to test `calcPayment ()` function.
   ii) Allow the user to enter the age of the paddy crops in weeks and the paddy field size in Hectare from keyboard. Call function `calcPayment()` and `calcSubsidy()` in your main function. Display the payable amount and subsidy amount using `displayDetails()` function. The program should read the details of 3 farmers and perform the calculations.

Display the details according to the following format.

The age of the paddy crops in week : .....
The paddy field size in Hectare : .....

Payable amount Subsidy amount

....
The age of the paddy crops in week : .....
The paddy field size in Hectare : .....

Payable amount Subsidy amount

....

Save your program as **funD.c**

```c
#include <stdio.h>
#include <assert.h>

float calcPayment(int age , float size);
float calcSubsidy(float payment);
void displayDetails(float payment , float subsidy);


int main(){

    assert (calcPayment(0, 1) == 2100);
    assert (calcPayment(2, 1) == 2040);

    int age, i;
    float size;
    float subsidy;
    float payment;

    for(i=1; i<=3 ; i++){

    printf("The age of the paddy crops in week(0, 2, 4, 6, 7): ");
    scanf("%d", &age);

    printf("The paddy field size in Hectare: ");
    scanf("%f", &size);

    calcPayment(age,size);

    payment = calcPayment(age, size) + calcSubsidy(payment);

    subsidy = calcSubsidy(payment);

    displayDetails(payment , subsidy);

    }

    return 0;

}

float calcPayment(int age , float size){
    switch (age){
        case 0:
        return size * (0 * 68 + 35 * 60  + 0 * 75);
        break;

        case 2:
        return size * (30 * 68 + 0 * 60 + 0 * 75);
        break;

        case 4:
        return size* (65 * 68 + 0 * 60 + 25 * 75);
        break;

        case 6:
        return size * (50 * 68 + 0 * 60+ 25 * 75);
        break;

        case 7:
        return size * (30 * 0 + 35 * 60 + 0 * 75);
        break;

        default: printf("\nInvalid!\n");
        break;
    }

}

float calcSubsidy(float payment){
     return payment * 0.15;
}

void displayDetails(float payment , float subsidy){

    printf("\nPayable Amount\t\tSubsidy amount\n");
    printf("%.2f\t\t\t%.2f\n", payment - subsidy, subsidy);

    printf("\n");
}

```

Extra model paper

Question 4

Write a C program to calculate the employee salaries of a company. Employees are entitled to get an increment according to their grades. Increment percentages for each grade is given in the following table.

grade	Increment
1	10%
2	15%
3	20%

Write a function called **`calculateIncrement()`** to calculate and return the increment given for the employees. Function prototype is given below.

```
float calculateIncrement(int grade, float basicSalary);
```

Write a function called **`calcTotSalary()`** to calculate the total salary.
(total salary = salary + increment).

```
float calcTotSalary(float salary, float increment);
```

In your main function enter the basic salary of an employee and the grade from the keyboard. Display the increment and total salary as follows using the functions created above.

Enter Salary : .....
Enter grade: .....
Increment: .....
Total Salary :.....

```c
#include <stdio.h>

float calculateIncrement(int grade, float basicSalary);
float calcTotSalary(float salary, float increment);

int main(){

    float salary;
    int grade;

    printf("Enter salary: ");
    scanf("%f", &salary);

    printf("Enter grade: ");
    scanf("%d,", &grade);

    float increment = calculateIncrement(grade, salary);
    float TotSalary = calcTotSalary(salary,increment);

    printf("Increment: %.2f\n", increment);
    printf("Total Salary: %.2f\n",TotSalary);

    return 0;

}
float calculateIncrement(int grade, float basicSalary){

    switch(grade){
        case 1:
            return basicSalary * 0.1;
            break;

        case 2:
            return basicSalary * 0.15;
            break;

        case 3:
            return basicSalary * 0.2;
            break;

        default : printf("Invalid\n");

    }
}

float calcTotSalary(float salary, float increment){

    return salary + increment;

}

```