Moodle

Sri Lanka Institute of Information Technology

Question **7**

Not yet answered

Marked out of 10.00

Flag question

Write a C program to do the following.

a) Create a 2D integer array called **Matrix** with 3 rows and 3 columns.

b) Input numbers from the keyboard and store in the array.

c) Replace the upper trangular by value 1

d) Find sum of rows and columns of the matrix

Hint : You need to use repetition structures to manipulate the matrix

Test Data :

Input elements to the matrix :

element - [0],[0] : 4

element - [0],[1] : 3

element - [0],[2] : 8

element - [1],[0] : 2

Expected Output :

The 2D array is: 4 3 8

2 7 4

6 9 5

After setting 1 in upper triangular

The 2D array is: 4 1 1

2 7 1

6 9 5

The sum of rows : 6, 10, 20

The sum of columns : 12, 17, 7

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Write a C program to calculate and print the yearly interest for a fixed deposit. The customer first name and fixed deposit amount should be obtained by the user from the keyboard and display the total interest to be paid for the customer. The interest rates are as follow

Balance	Interest Rate(%)
less than 10000	2
10000 and above but less than 100000	3
100000 and above but less than 500000	5
500000 and above	10

If the interest exceeds 100000 then 4% of tax payment will be deducted.

Test Input Data :

Alan

2000000

Sample Calculation:

2000000(10/100)=200000*

Final Interest(after tax deduction)=200000-200000(4/100)=192000*

Expected Output :

Customer Name : Alan

Fixed Deposit Amount : 2000000

Interest : *192000*

Following program is written by a student to display the power of an integer using the while loop.

There are **five** errors in the program. Find the errors and write down the **corrected statements** in given space.

```
1. #include <stdio.h>
2. int main()
3. {
4.     int base, exp;
5.     int result = 1;
6.
7.     printf("Enter a base number: ");
8.     scanf("%f", &base);
9.
10.    printf("Enter an exponent: ");
11.    scanf("%d", exp);
12.
13.    get power of an integer
14.    while (exp != 0)
15.    {
16.        result += base;
17.        --exp;
18.    }
19.
20.    printf("Answer = ", result);
21.
22.    return 0;
23. }
```

.....

.....

if n = 30, array will look like

30	29 .	25	16	0	-25	-61	-100

```
# include <stdio.h>
int main(void)
{
    int myArr[8];
    ..............................
    ..............................

    return 0;
}
```

Complete the following C program to fill an integer array with numbers. You must use at least one **repetition structure** in this program.

element 1 = n (any number entered from the keyboard)

element 2 = (element 1) - 1

element 3 = (element 2) - 4

element 4 = (element 3) - 9

.....

.....

if n = 30, array will look like

30	29	25	16	0	-25	-61	-100

```
# include <stdio.h>
int main(void)
{
    int myArr[8];
    ..............................
    ..............................

    return 0;
```

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Write a C program to input a number from the keyboard (n) and f
number is entered , terminate the program.

$$1+\frac{1}{2}+\frac{1}{3}+\frac{1}{4}+\frac{1}{5}\ldots\ldots\ldots\ldots\ldots\ldots\ldots+\frac{1}{n}$$

Moodle

Test Data :

Input elements to the matrix :

element - [0],[0] : 4

element - [0],[1] : 3

element - [0],[2] : 8

element - [1],[0] : 2

.....

.....

Expected Output :

The 2D array is: 4 3 8

2 7 4

6 9 5

After setting 1 in upper triangular

The 2D array is: 4 1 1

2 7 1

6 9 5

The sum of rows : 6, 10, 20

The sum of columns : 12, 17. 7

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Write a C program to input any number from the keyboard, separate and display the digits of the number. If a negative number is entered , terminate the program.

eg: if number is 783, the digits are 7, 8, 3 in any order

if number is 6934, the digits are 6, 9, 3, 4 in any order

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Question **11**

Not yet answered

Marked out of 5.00

Flag question

Complete the following C statement to calculate the result of $\sqrt[3]{|b| + c * c}$

Assume b and c variables are integers.

float answer = [ ]([ ]([ ]) + [ ]([ ], 2)) , 0.333);

Next page

Complete the following C program to fill an integer array with numbers. You must use at least one **repetition structure** in this program.

element 1 = n (any number entered from the keyboard)

element 2 = (element 1) - 1

element 3 = (element 2) - 4

element 4 = (element 3) - 9

.....

.....

if n = 30, array will look like

30	29	25	16	0	-25	-61	-100

```
# include <stdio.h>
int main(void)
{
    int myArr[8];
    ..............................
    ..............................

    return 0;
}
```

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Flag question

Complete the following C program to fill an integer array with following numbers. You must use at lea program.

1	2	3	5	8	13	21	34	87

element 1 = 1

element 2 = 2

element 3 = element 1+ element 2

element 4 = element 2+ element 3

.....

.....

element 8 = element 6+ element 7

element 9 (Last value) = total of element 1 to element 8

```
# include <stdio.h>
int main(void)
{
    int numArr[9];
    ..............................
    ..............................

    return 0;
}
```

```
4.  int base, exp;
5.  int result = 1;
6.
7.  printf("Enter a base number: ");
8.  scanf("%f", &base);
9.
10.  printf("Enter an exponent: ");
11.  scanf("%d", exp);
12.
13.  get power of an integer
14.  while (exp != 0)
15.  {
16.      result += base;
17.      --exp;
18.  }
19.
20.  printf("Answer = ", result);
21.
22.  return 0;
23. }
```

Corrected Statement 01:

Corrected Statement 02 :

Corrected Statement 03 :

Corrected Statement 04 :

Corrected Statement 05 :

Question **11**

Not yet answered

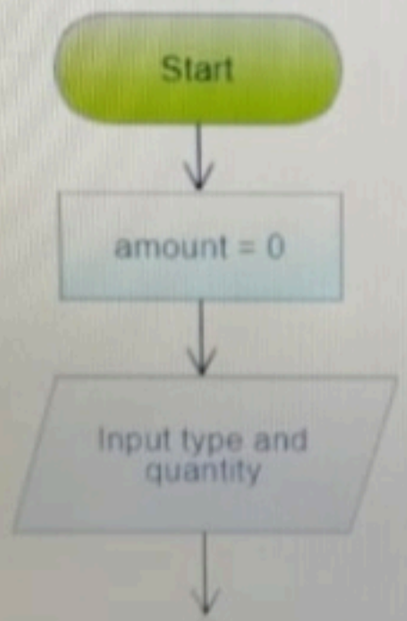
Marked out of 5.00

Flag question

A cafeteria that provides food parcels gets pre orders from customers. The following flowchart is drawn to calculate and display the bill amount of a customer.

Write the relevant instructions (Block 01 - 05) in the given space.

Food Parcel Type	Price of a parcel(Rs.)
A	200.00
B	300.00



False

Block 01

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Following C program contains the structure called "Pharmacy" to store medicinal product details.

productNo	integer
productName	char[50]
unitPrice	double
qty	integer

The program creates a variable called t1 using *Pharmacy* data type and store some data entered through keyboard. Next the program calculates the total price based on quantity and unit price, then print the details on the screen as shown in output below. **Complete the following C code by filling the missing statements.**

Input Values:

productNo	productName	unitPrice	qty
1001	AZITHROMYCIN	50.00	120

Output:

productNo	productName	Total Price
1001	AZITHROMYCIN	6000.00

```
#include<stdio.h>

{
        int productNo;
        char productName[30];
```

9

answered

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question

Write a C program to calculate and print the yearly interest for a fixed deposit. The customer Id(4 digit) and fixed deposit amount should be obtained by the user from the keyboard and display the total interest to be paid for the customer. The interest rates are as follow

Balance	Interest Rate(%)
20000 or less	3
above 20000 but less than or equal to 200000	5
above 200000 but less than or equal to 1000000	7
above 1000000	10

If the interest exceeds 50000 then 3% of tax payment will be deducted.

Test Input Data :
1101
2000000

Sample Calculation:

*2000000*10/100=200000*

Final Interest payment=200000-200000(3/100)=194000*

Expected Output :
Customer ID : 1101
Fixed Deposit Amount : 2000000
Interest : *194000*

Following program is written by a student to display the power of an integer using the while loop.

There are **five** errors in the program. Find the errors and write down the **corrected statements** in given space.

```
1. #include <stdio.h>
2. int main()
3. {
4.     int base, exp;
5.     int result = 1;
6.
7.     printf("Enter a base number: ");
8.     scanf("%f", &base);
9.
10.    printf("Enter an exponent: ");
11.    scanf("%d", exp);
12.
13.    get power of an integer
14.    while (exp != 0)
15.    {
16.        result += base;
17.        --exp;
```

An event management company needs to implement a system to manage their online events. They want to create new functions to be integrated to the system such as register a user to the event, purchase event ticket, grant discounts based on each event.

To purchase ticketes, one must submit the **ticket type**(tType) , 1- Gold, 2 - Silver, 3 - Bronze, **session** (session), (m- morning, a - afternoon, e - evening) and the **number of tickets to purchase** (ticketCount). Then the function should display the amount of the ticketes purchased.

Ticket Type	Price
1 - Gold	5000/=
2 - Silver	2500/=
3 - Bronze	1000/=

Fill in the blanks to complete the function **purchase()**.

```
_____ purchase( _____ tType , _____ _____ , int ticketCount)
{
    float total = 0.0;
    if(tType == 1)
    {
        total = ticketCount * 5000.0;
    }
    else if(tType == 2)
    {
        total = ticketCount * 2500.0;
    }
    else if(tType == 3)
    {
        total = ticketCount * 1000.0;
    }
    switch(session)
    {
        case 'm' : printf("Thank you for purchasing %d tickets for  morning session\n", ticketCount);
                   break;
        case 'a' : printf("Thank you for purchasing %d tickets for  afternoon session\n", ticketCount);
                   break;
```

Technology

to calculate the result of $\sqrt[3]{|b| + c * c}$

ers.

```
) +                    (          , 2)) , 0.333);
```

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Question **4**

Not yet answered

Marked out of 5.00

Flag question

Following C program is used to read numbers from a file called "number.dat" that is shown below.

number.dat

2 4 6 8

Furthermore, this program allows to enter another number from the key board and store it in the "number.dat" file, if the file does not already have that number and it is an even number. If the number exist in the file or if it is an odd number, display an error message. (Assume the new number is >0).

Fill the missing words/statements in following C program.

```
#include <stdio.h>
int main( void)
{
        int number, newNumber;
        printf("Enter Number: ");
        scanf("%d", &newNumber);

        FILE *numPtr;
        numPtr = fopen("number.dat", _____);
        if(numPtr == NULL)
        {
                printf("File could not be opened \n");
                return -1;
        }

        fscanf(numPtr, "%d", &number);
```

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Finish attemp

Time left 0:57

1 2

9 10

FEEDBACK

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Book publishing house distributes books to bookstores. Book publishers records following book details before the distribution.

Book No	integer
Book Name	char[50]
Book Price	float
Quantity	integer

Following C program uses a structure called "Book" to store book details before the distribution. You need to enter the details of 3 books from keyboard and calculate the total price of each book based on the quantity ordered. Finally print the details as shown in second table. **Complete the following C code by filling in the missing words/statements.**

Input Values:

Book No	Book Name	Book Price	Quantity
1001	C Programming	1500.00	12
1002	Algorithms	1750.00	8
1003	Java	1200.00	10

Output:

Book No	Book Name	Total Price
1001	C Programming	18000.00
1002	Algorithms	14000.00
1003	Java	12000.00

```
#include<stdio.h>
                {
    int bookNo;
    char bookName[50];
    double bookPrice;
    int qty;
```

```
int main(void)
{
    int ItemCode;
    char  ItemName[30];
    float ItemPrice;

    int i;
    FILE *fItem;
    fItem = fopen("items.dat",          );

    if (          == NULL)
    {
        printf("File cannot be open");
        return -1;
    }

    for(i = 1; i <= 5; ++i)
    {
        printf("Input Item Code: ");
        scanf("%d", &ItemCode);
        printf("Input Item Name: ");
        scanf("%s", ItemName);
        printf("Input Item Price: ");
        scanf("%f", &ItemPrice);
            (fItem, "%d %s %.2f\n",                                    );
    }
                                ;
    return 0;
```

The file "vcard.dat" contains vaccination details of student
number of dosages taken are included in the file.

vcard.dat file

IT12345678	Nishal	2
IT11223345	Amy	2
IT22335566	Nethu	1
IT10378961	Osanda	2
IT13645978	Akash	1

Write a C program to read this file and display the number of

The file "vcard.dat" contains vaccination details of students at SLIIT. The student registration number , name and the number of dosages taken are included in the file.

vcard.dat file

IT12345678	Nishal	2
IT11223345	Amy	2
IT22335566	Nethu	1
IT10378961	Osanda	2
IT13645978	Akash	1

Write a C program to read this file and display the number of students with one dosage and two dosages.

Question **11**
Not yet answered
Marked out of 10.00
Flag question

Write a C program to read and display all content from file "studentcount.dat" that has the subject name, and the studen count of several subjects offered by a institute. Also find and display the **most popular subject.**

studentCount file

Maths 5
Science 10
History 2
Geography 8
English 3

The output of the main program must be formatted as follows:

Subject Name	Student Count
Maths	5
Science	10
History	2
Geography	8
English	3

Most popular subject is : Science

Question **13**

Not yet answered

Marked out of 10.00

Flag question

Complete the following C program to fill an integer array with numbers. You must use at least one **repetition structure** in this program.

element 1 = n (any number entered from the keyboard)

element 2 = (element 1) - 1

element 3 = (element 2) - 4

element 4 = (element 3) - 9

.....

.....

if n = 30, array will look like

30	29	25	16	0	-25	-61	-100

```
# include <stdio.h>
int main(void)
{
    int myArr[8];
    ..............................
    ..............................

    return 0;
}
```

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Finish attemp

Time left 0:2

1 2 8 9

FEEDBAC

15

```
printf("Enter a base number: ");
scanf("%f", &base);

printf("Enter an exponent: ");
scanf("%d", exp);

get power of an integer
while (exp != 0)
{
    result += base;
    --exp;
}

printf("Answer = ", result);

return 0;
}
```

Corrected Statement 01:

Corrected Statement 02 :

Corrected Statement 03 :

Corrected Statement 04 :

Corrected Statement 05 :

Next pa

Complete the following function implementation of ***calcDiscount()*** that takes the size of the ice cream container (**size**), cream(**flavour**) , and age (**age**) as parameters, which then calculates the discount to be deducted from the total amount function by filling the missing statements to run the code properly.

```
        calcDiscount(      age,      size,                )
{
    float discount = 0, price;
    if(flavour == 'v' || flavour == 'V')
        price = 250.00;
    else if(flavour == 's' || flavour == 'S')
        price = 500.00;
    else if(flavour == 'c' || flavour == 'C')
        price = 600.00;
    else if (if flavour == 'b' || flavour == 'B')
        price = 800.00;
    if ((age < 8) || (age > 60))
    {
        if (size == 1)
            discount = 0 ;
        else if (size == 2)
            discount = price * size * 0.05;
        else if (size == 3)
            discount = price * size * 0.2;
        else if (size == 4)
            discount = price * * size * 0.5;
        else if (size == 5)
            discount = price * size * 0.7;
    }
    else
    {
        if (size == 1) || ( size == 2)
            discount = 0 ;
        else if (size == 3)
            discount= price * size * 0.05;
        else if (size == 4)
            discount = price * size * 0.1;
        else if (size == 5)
```

integrated to the system such as register a user to the event, purchase event ticket, grant disc

To purchase ticketes, one must submit the **ticket type**(tType) , 1- Gold, 2 - Silver, 3 - Bronze, **session** evening) and the **number of tickets to purchase** (ticketCount). Then the function should display the a

Ticket Type	Price
1 - Gold	5000/=
2 - Silver	2500/=
3 - Bronze	1000/=

Fill in the blanks to complete the function **purchase()**.

```
[      ] purchase( [      ] tType , [      ] [          ] , int ticketCount)
{
    float total = 0.0;
    if(tType == 1)
    {
        total = ticketCount * 5000.0;
    }
    else if(tType == 2)
    {
        total = ticketCount * 2500.0;
    }
    else if(tType == 3)
    {
        total = ticketCount * 1000.0;
    }
    switch(session)
    {
        case 'm' : printf("Thank you for purchasing %d tickets for  morning session\n", ticketCount);
                   break;
        case 'a' : printf("Thank you for purchasing %d tickets for  afternoon session\n", ticketCount);
                   break;
        case 'e' : printf("Thank you for purchasing %d tickets for  evening session\n", ticketCount);
                   break;
```

Write a C program to read and display all content from file "studentcount.dat" that has the subject name, and the student count of severa subjects offered by a institute. Also find and display the **most popular subject**.

studentCount file

Maths 5

Science 10

History 2

Geography 8

English 3

The output of the main program must be formatted as follows:

Subject Name	Student Count
Maths	5
Science	10
History	2
Geography	8
English	3

Most popular subject is : Science

Fill the blanks in the following C program so that it will print fo

Note: you can only use the given functions and variables to fil

output: first-first-first*

```
#include<stdio.h>
/* function declaration */
void func1(int num1 );
void func2();
int func3(char c);
char func4(int n1,int n2);
int main () {
    int n1=100;
    char c1='b';
    char c2='c';
    func1(          );

                  ();

    printf("%c",c1,func4(func3(          ),          ),          );

    return(0
```

Not yet answered

Marked out of 5.00

Flag question

Note: you can only use the given functions and variables to fill the blanks.

output: first-first-first*

```
#include<stdio.h>
/* function declaration */
void func1(int num1 );
void func2();
int func3(char c);
char func4(int n1,int n2);
int main () {
  int n1=100;
  char c1='b';
  char c2='c';
  func1(      );
  [      ]();
  printf("%c",func4(func3(      ),[      ](      )));
  return 0;
}
void func1(int num1 ) {
 int i;
 if (num1 == 100)
```

An ice cream truck has created a new app that allows users to order ice cream online. In order to purchase ice cream, one has to p
flavor of the ice cream and the size of the ice cream container. Based on the quantity of ice cream been purchased, they will be gi
discount. The discount is also applicable if the user is less than 8 years old and is a senior citizen (more than 60 years of age.) The d
scheme is as follows.

Ice Cream Discount		
Age	container size	discount
children less than 8 years old and senior citizens	1L	No discount
	2L	5%
	3L	20%
	4L	50%
	5L	70%
For others	1L	No discount
	2L	No discount
	3L	5%
	4L	10%
	5L	20%

and the prices are as follows

Ice Cream Price	
Flavour	Price per liter
Vanilla	250/=
Strawberry	500/=
Chocolate	650/=
Butterscotch	800/=

```
#include<stdio.h>
[                    ]{
    int bookNo;
    char bookName[50];
    double bookPrice;
    int qty;
};
int main(void){
    [                    ] book[3];
    int i;
    float total[3]={0};
    for(i=0;  i <= 3; i++){
        printf("Enter Book No: ");
        scanf("%d",&book[i].bookNo);
        printf("Enter Book Name: ");
        [                    ]

        printf("Enter Book Price: ");
        scanf("%lf",&book[i].bookPrice);
        printf("Enter Book Quantity: ");
        scanf("%d",&book[i].qty);

        [                    ] = book[i].bookPrice * book[i].qty;
}
printf("Book No\tBook Name\t\tTotal Price \n");

for(i=0;i<3;i++){
    printf("%d\t %s\t\t %.2f\n",                    );
```

Book publishing house distributes books to bookstores. Book publishers records following book details before the distribution.

Book No	integer
Book Name	char[50]
Book Price	float
Quantity	integer

Following C program uses a structure called "Book" to store book details before the distribution. You need to enter the details of 3 books from keyboard and calculate the total price of each book based on the quantity ordered. Finally print the details as shown in second table. **Complete the following C code by filling in the missing words/statements.**

Input Values:

Book No	Book Name	Book Price	Quantity
1001	C Programming	1500.00	12
1002	Algorithms	1750.00	8
1003	Java	1200.00	10

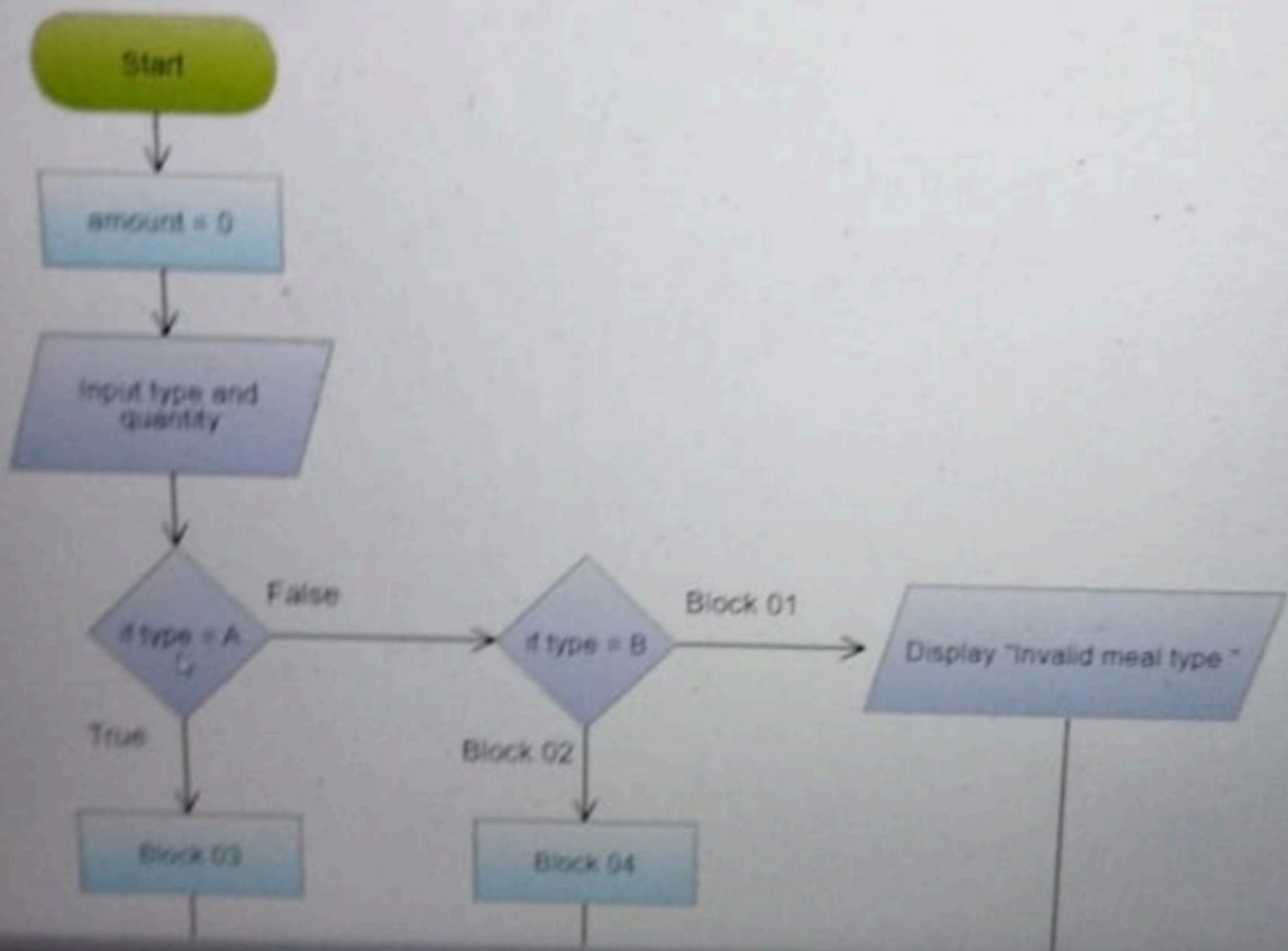
Output:

Book No	Book Name	Total Price
1001	C Programming	18000.00
1002	Algorithms	14000.00
1003	Java	12000.00

```
#include<stdio.h>

                {

    int bookNo;
    char bookName[50];
```

```
[      ] calcDiscount([      ] age, [      ] size, [              ])
{
    float discount = 0, price;
    if(flavour == 'v' || flavour == 'V')
        price = 250.00;
    else if(flavour == 's' || flavour == 'S')
        price = 500.00;
    else if(flavour == 'c' || flavour == 'C')
        price = 600.00;
    else if (if flavour == 'b' || flavour == 'B')
        price = 800.00;
    if ((age < 8) || (age > 60))
    {
        if (size == 1)
            discount = 0 ;
        else if (size == 2)
            discount = price * size * 0.05;
        else if (size == 3)
            discount = price * size * 0.2;
        else if (size == 4)
            discount = price * * size * 0.5;
        else if (size == 5)
            discount = price * size * 0.7;
    }
    else
    {
        if (size == 1) || ( size == 2)
            discount = 0 ;
        else if (size == 3)
            discount= price * size * 0.05;
        else if (size == 4)
            discount = price * size * 0.1;
        else if (size == 5)
            discount = price * size * 0.2;
    }

    return                    ;
}
```

A cafeteria that provides food parcels gets pre orders from customers. The following flowchart is drawn to calculate and disp
amount of a customer.

Write the relevant instructions (Block 01 - 05) in the given space.

Food Parcel Type	Price of a parcel(Rs.)
A	200.00
B	300.00