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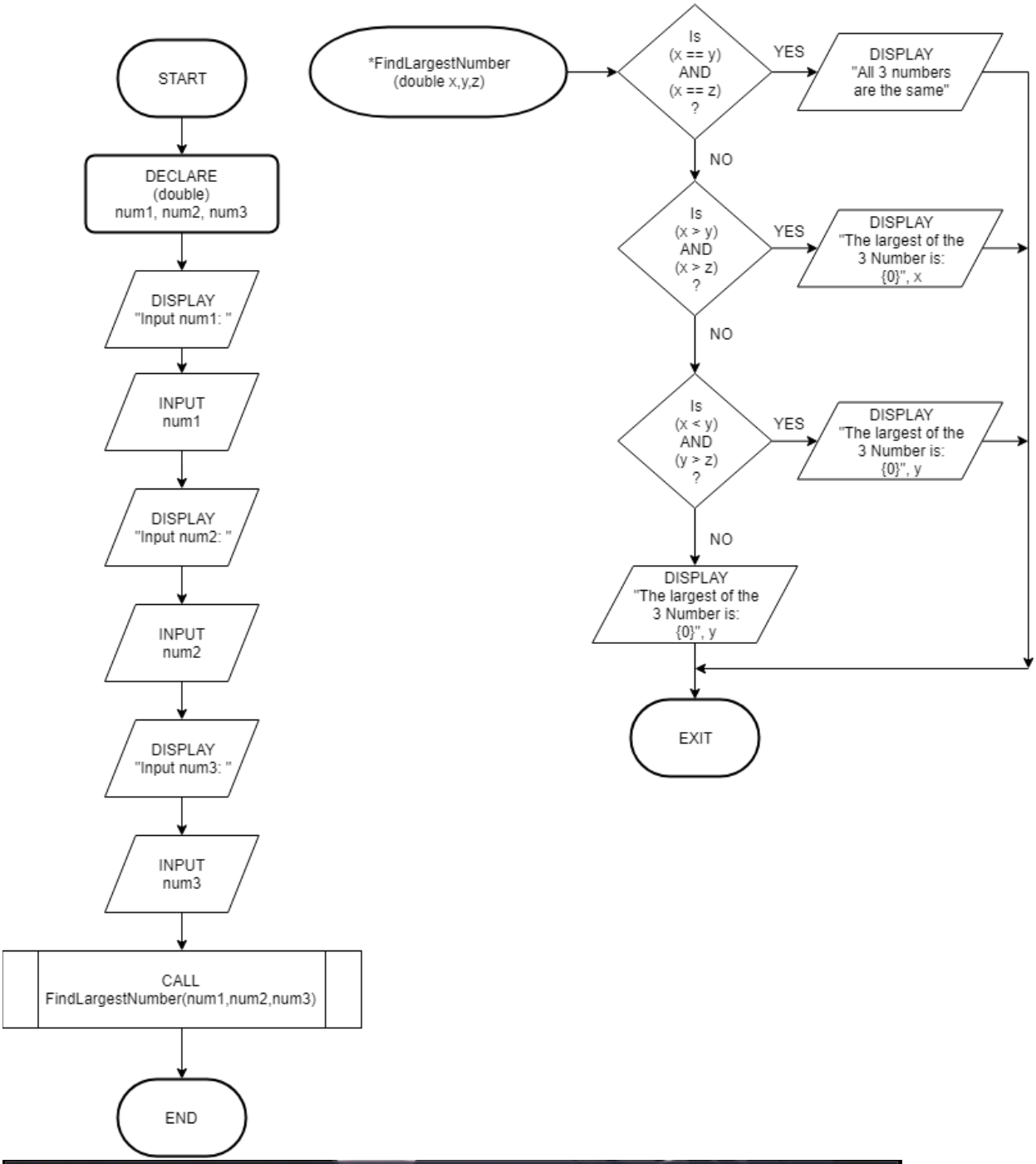
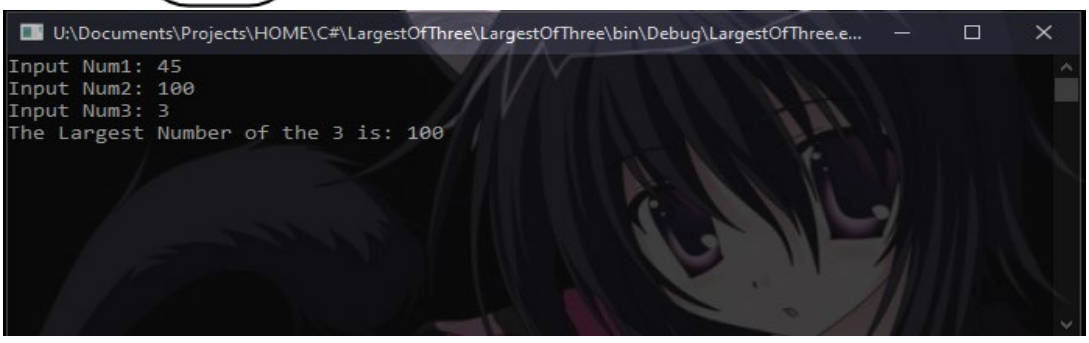
Labsheet 2

Question 1

1.

```
DECLARE (double) num1, num2, num3
DISPLAY "Input num1: "
Input num1
DISPLAY "Input num2: "
Input num2
DISPLAY "Input num3: "
Input num3
CALL FindLargestNumber(num1, num2, num3)
FUNCTION FindLargestNumber(double x. y, z)
        IF (x == y) AND (x == z) THEN
                DISPLAY "All 3 numbers are the same!"
        ELSEIF (x > y) AND (x > z)
                DISPLAY "The Largest of The 3 is: {0}", x
        ELSEIF (x < y) AND (y > z)
                DISPLAY "The Largest of the 3 is: {0}", y
        ELSE
                DISPLAY "The Largest of the 3 is: {0}", z
        ENDIF
END FUNCTION
```

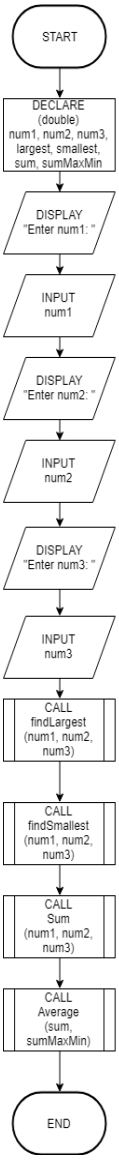

START
DECLARE
(double)
num1, num2, num3
DISPLAY
"Input num1: "
INPUT
num1
DISPLAY
"Input num2: "
INPUT
num2
DISPLAY
"Input num3: "
INPUT
num3
CALL
FindLargestNumber(num1,num2,num3)
END
*FindLargestNumber
(double x,y,z)
Is
(x == y)
AND
(x == z)
?
YES
DISPLAY
"All 3 numbers
are the same"
NO
Is
(x > y)
AND
(x > z)
?
YES
DISPLAY
"The largest of the
3 Number is:
{0}", x
NO
Is
(x < y)
AND
(y > z)
?
YES
DISPLAY
"The largest of the
3 Number is:
{0}", y
NO
DISPLAY
"The largest of the
3 Number is:
{0}", y
EXIT

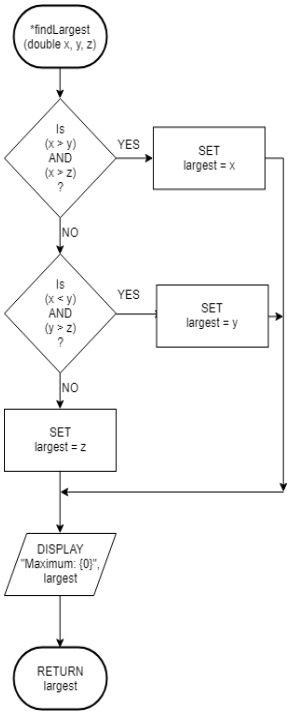

U:\Documents\Projects\HOME\C#\LargestOfThree\LargestOfThree\bin\Debug\LargestOfThree.e...
Input Num1: 45
Input Num2: 100
Input Num3: 3
The Largest Number of the 3 is: 100

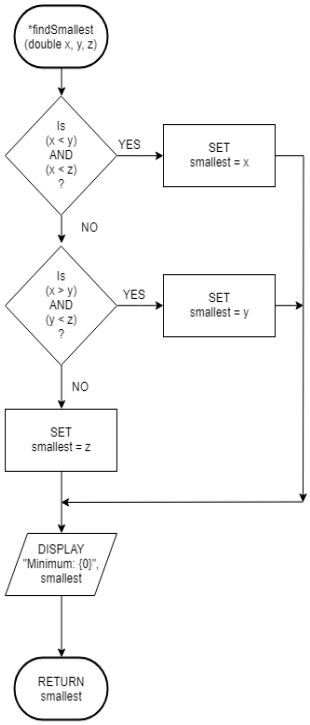
2.

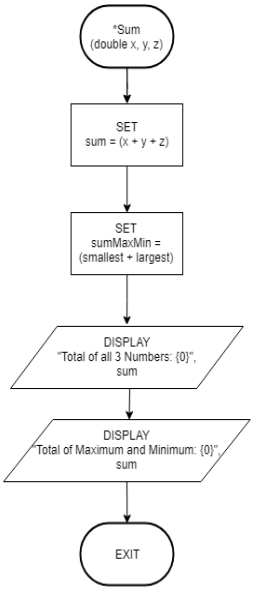
```
DECLARE (double) num1, num2, num3, largest, smallest, sum, sumMinMax
DISPLAY "Input num1: "
Input num1
DISPLAY "Input num2: "
Input num2
DISPLAY "Input num3: "
Input num3
CALL FindLargest(num1, num2, num3)
CALL FindSmallest(num1, num2, num3)
CALL Sum (num1, num2, num3)
CALL Average(sum, sumMinMax)

FUNCTION FindLargest (double x. y, z)
        IF (x > y) AND (x > z)
                SET largest = x
        ELSEIF (x < y) AND (y > z)
                SET largest = y
        ELSE
                SET largest = z
        ENDIF
        DISPLAY "The Largest of The 3 is: {0}", largest
END FUNCTION
FUNCTION FindLargest (double x. y, z)
        IF (x < y) AND (x < z)
                SET smallest = x
        ELSEIF (x > y) AND (y < z)
                SET smallest = y
        ELSE
```

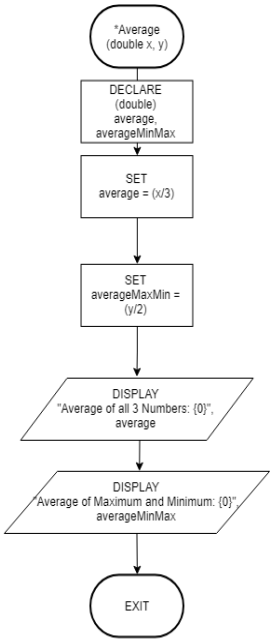
```
            SET smallest = z
        ENDIF
        DISPLAY "The Smallest of The 3 is: {0}", smallest
END FUNCTION
FUNCTION Sum (double x. y, z)
        SET sum = (x + y + z)
        SET sumMinMax = (smallest + smallest)
        DISPLAY "Total of all 3 numbers is: {0}", sum
        DISPLAY "Total of Minimum and Maximum is: {0}", sum
END FUNCTION
FUNCTION Average (double x. y)
        DECLARE (double) average, averageMinMax
        SET average = (x/3)
        SET averageMinMax = (y/2)
        DISPLAY "Average of all 3 numbers is: {0}", average
        DISPLAY "Average of Minimum and Maximum is: {0}", averageMinMax
END FUNCTION
```


START
DECLARE (double) num1, num2, num3, largest, smallest, sum, sumMaxMin
DISPLAY "Enter num1: "
INPUT num1
DISPLAY "Enter num2: "
INPUT num2
DISPLAY "Enter num3: "
INPUT num3
CALL findLargest (num1, num2, num3)
CALL findSmallest (num1, num2, num3)
CALL Sum (num1, num2, num3)
CALL Average (sum, sumMaxMin)
END


*findLargest (double x, y, z)
Is (x > y) AND (x > z) ?
YES
SET largest = x
NO
Is (x < y) AND (y > z) ?
YES
SET largest = y
NO
SET largest = z
DISPLAY "Maximum: {0}", largest
RETURN largest


*findSmallest (double x, y, z)
Is (x < y) AND (x < z) ?
YES
SET smallest = x
NO
Is (x > y) AND (y < z) ?
YES
SET smallest = y
NO
SET smallest = z
DISPLAY "Minimum: {0}", smallest
RETURN smallest

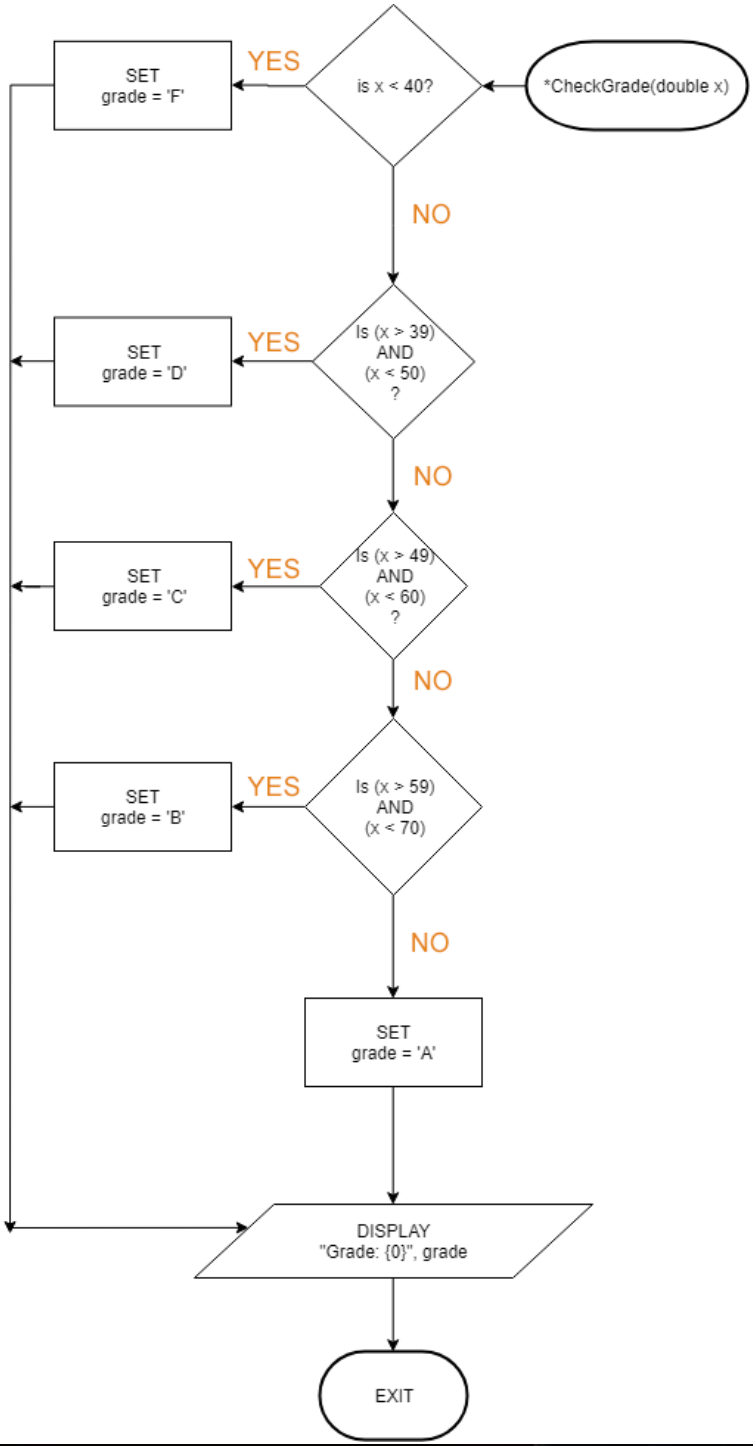

*Sum (double x, y, z)
SET sum = (x + y + z)
SET sumMaxMin = (smallest + largest)
DISPLAY "Total of all 3 Numbers: {0}", sum
DISPLAY "Total of Maximum and Minimum: {0}", sum
EXIT

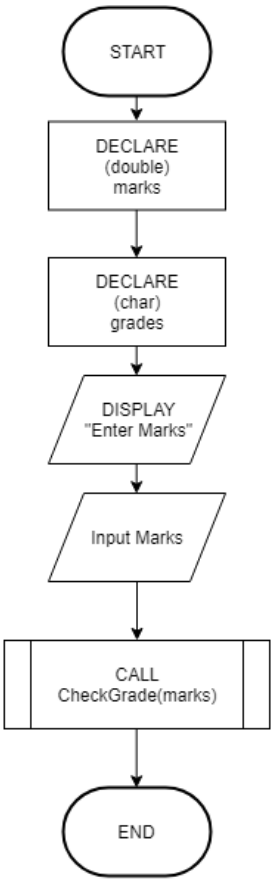

*Average (double x, y)
DECLARE (double) average, averageMinMax
SET average = (x/3)
SET averageMaxMin = (y/2)
DISPLAY "Average of all 3 Numbers: {0}", average
DISPLAY "Average of Maximum and Minimum: {0}", averageMinMax
EXIT

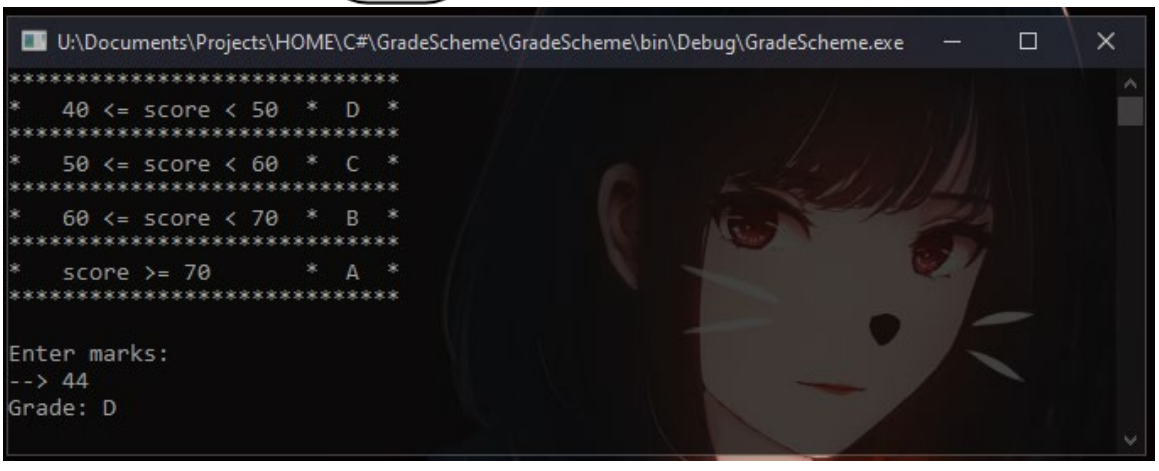

U:\Documents\Projects\HOME\C#\MashUpOfThree\MashUpOfThree\bin\Debug\MashUpOfThree.exe
Input Num1: 1
Input Num2: 2
Input Num3: 3
Maximum: 3
Minimum: 1
Total of all 3 numbers: 6
Total of Minimum and Maximum: 4
Average of all 3 numbers: 2
Average of Minimum and Maximum: 2

3.

```
DECLARE (double) marks
DECLARE (char) grade
DISPLAY "Input marks: "
Input marks
CALL CheckGrade (marks)

FUNCTION CheckGrade(double x)
        DO
                IF (x < 40) THEN
                        SET grade = 'F'
                ELSEIF (x > 39) AND (x < 50)
                        SET grade = 'D'
                ELSEIF (x > 49) AND (x < 60)
                        SET grade = ''C
                ELSEIF (x > 59) AND (x < 70)
                        SET grade = 'B'
                ELSE
                        SET grade = 'A'
                ENDIF
                DISPLAY "Grade: {0}", grade
                BREAK
        WHILE (true)
END FUNCTION
```


*CheckGrade(double x)
is x < 40?
YES
SET
grade = 'F'
NO
Is (x > 39)
AND
(x < 50)
?
YES
SET
grade = 'D'
NO
Is (x > 49)
AND
(x < 60)
?
YES
SET
grade = 'C'
NO
Is (x > 59)
AND
(x < 70)
YES
SET
grade = 'B'
NO
SET
grade = 'A'
DISPLAY
"Grade: {0}", grade
EXIT

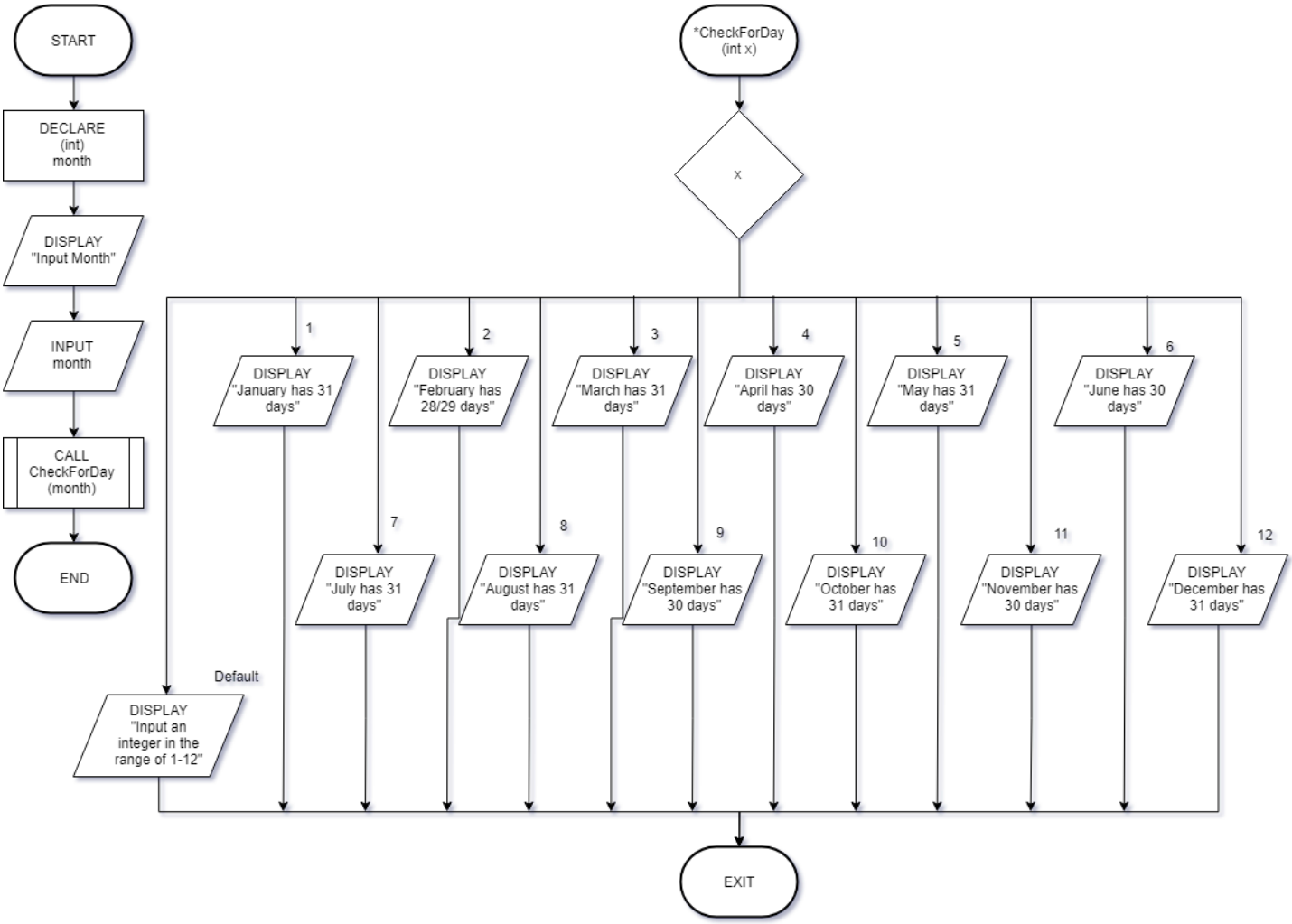

START
DECLARE
(double)
marks
DECLARE
(char)
grades
DISPLAY
"Enter Marks"
Input Marks
CALL
CheckGrade(marks)
END

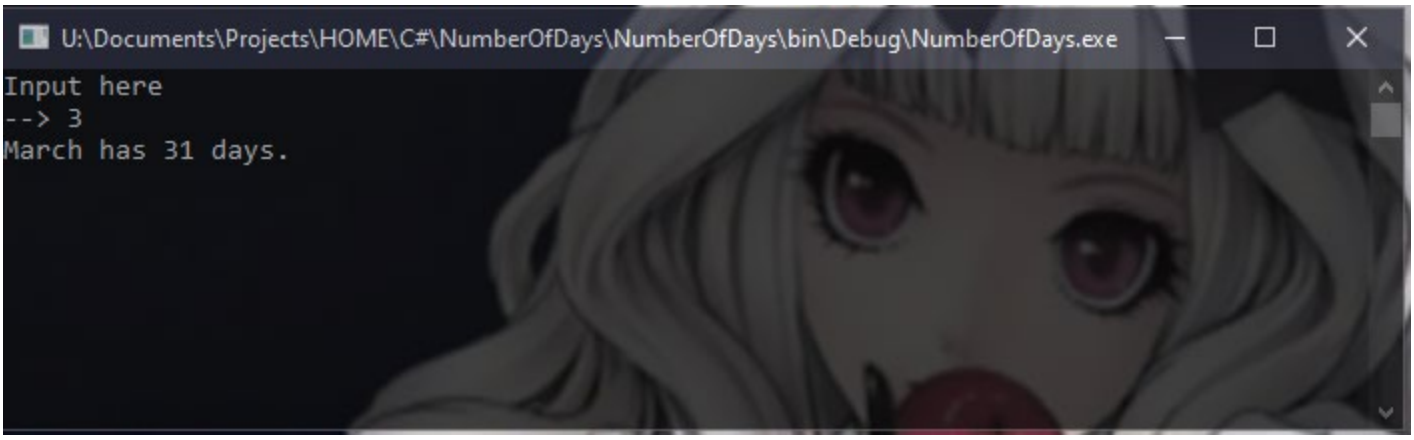

U:\Documents\Projects\HOME\C#\GradeScheme\GradeScheme\bin\Debug\GradeScheme.exe
****
* 40 <= score < 50 * D *
****
* 50 <= score < 60 * C *
****
* 60 <= score < 70 * B *
****
* score >= 70 * A *
****
Enter marks:
--> 44
Grade: D

4.

```
DECLARE (int) month
DISPLAY "Input here: "
Input month
CALL CheckForDay (month)

FUNCTION CheckForDay (int x)
        SELECT CASE (x)
                Case 1:
                        DISPLAY "January has 31 days"
                        BREAK
                Case 2:
                        DISPLAY "February has 28/29 days"
                        BREAK
                Case 3:
                        DISPLAY "March has 31 days"
                        BREAK
                Case 4:
                        DISPLAY "April has 30 days"
                        BREAK
                Case 5:
                        DISPLAY "May has 31 days"
                        BREAK
                Case 6:
                        DISPLAY "June has 30 days"
                        BREAK
                Case 7:
                        DISPLAY "July has 31 days"
                        BREAK
```

```
        Case 8:
            DISPLAY "August has 31 days"
            BREAK
        Case 9:
            DISPLAY "September has 30 days"
            BREAK
        Case 10:
            DISPLAY "October has 31 days"
            BREAK
        Case 11:
            DISPLAY "November has 30 days"
            BREAK
        Case 12:
            DISPLAY "December has 31 days"
            BREAK
        Case Default:
            DISPLAY "Input an integer in range of 1-12 Only!"
            BREAK
    END SELECT
END FUNCTION
```


START
DECLARE (int) month
DISPLAY "Input Month"
INPUT month
CALL CheckForDay (month)
END
*CheckForDay (int x)
x
1
DISPLAY "January has 31 days"
2
DISPLAY "February has 28/29 days"
3
DISPLAY "March has 31 days"
4
DISPLAY "April has 30 days"
5
DISPLAY "May has 31 days"
6
DISPLAY "June has 30 days"
7
DISPLAY "July has 31 days"
8
DISPLAY "August has 31 days"
9
DISPLAY "September has 30 days"
10
DISPLAY "October has 31 days"
11
DISPLAY "November has 30 days"
12
DISPLAY "December has 31 days"
Default
DISPLAY "Input an integer in the range of 1-12"
EXIT


U:\Documents\Projects\HOME\C#\NumberOfDays\NumberOfDays\bin\Debug\NumberOfDays.exe
Input here
--> 3
March has 31 days.

Question 2

Step 2: Based on the values to the variables in Step 1, what is the expected output? Hint: The output will be either what is printed to the screen, or nothing.

The condition	Expected Output

`If myAge == 31 AND yourAge < myAge Then`
`  Display "My age is 31 and your age is less than that"`
`End If`
	____

`If myAge <= 35 AND myAge >= 32 Then`
`  Display "My age is between 32 and 35"`
`End If`
	"My age is between 32 and 35"

`If yourAge == votingAge OR yourAge > votingAge Then`
`  Display "You can vote"`
`End If`
	"You can vote"

`If myNumber == 83 OR yourNumber == 83 Then`
`  Display "One of our numbers is 83"`
`End If`
	____

Step 3: Based on the values to the variables in Step 1, what is the expected output

The condition	Expected Output

`If myAge == 31 AND yourAge < myAge Then`
`  Display "My age is 31 and your age is less than that"`
`Else`
`  Display "Our ages do not qualify"`
`End If`
	Our ages do not qualify

`If myAge <= 35 AND myAge >= 32 Then`
`  Display "My age is between 32 and 35"`
`Else`
`  Display "My age is not within that range"`
`End If`
	My age is between 32 and 35

`If yourAge == votingAge OR yourAge > votingAge Then`
`  Display "You can vote"`
`Else`
`  Display "You cannot vote"`
`End If`
	You can vote

`If myNumber == 83 OR yourNumber == 83 Then`
`  Display "One of our numbers is 83"`
`Else`
`  Display "83 is not our numbers"`
`End If`
	83 is not our numbers