LAB EXERCISE 1 (SECJ1013)

PROGRAMMING TECHNIQUE 1

SECTION 02, SEM 1, 2025/2026

INSTRUCTIONS TO THE STUDENTS

- *This exercise must be done **individually**.*
- *Select your **ONE (1)** preferred set of question.*
- *Your solution must follow the input and output as required in the text and shown in the examples. You must test your solution with (but not limited to) all the input given in the examples.*
- *Any form of plagiarisms is **NOT ALLOWED**. Students who copied other students' assignments will get **ZERO** marks (both parties, students who copied, and students that share their work).*
- *The use of generative AI to generate the flowchart or the flowchart model code is **NOT ALLOWED**. **ZERO** marks will be given if caught.*
- *The use of tools to generate the flowchart based on AI-generated code is **NOT ALLOWED**. **ZERO** marks will be given if caught.*
- *The use of tools are only allowed for creating the flowchart manually.*

SUBMISSION PROCEDURE

- *Please submit this exercise according to the lecturer instruction.*
- *Only one file is required for the submission which is the flow chart (**save in PDF format**).*
- *Include your **NAME, MATRICS NUMBER, DATE, and SET NUMBER** at the top of the page. Submission without these details will not be marked.*
- *Submit the assignment via the UTM's e-learning system.*

SET 1

Construct a flow chart that reads an integer number and then calculate the sum of its digits. After that, identify whether the sum of digits for the integer is a multiple of 3, 4, and/ or 5. ***Hint:*** You should use operator divide (/) and modulus (%) and also **post-test loop** to answer this question.

Example 1

```
Enter an integer number: 5168
8 + 6 + 1 + 5 = 20
20 is multiples of 4 and 5
```

Example 2

```
Enter an integer number: 9996999
9 + 9 + 9 + 6 + 9 + 9 + 9 = 60
60 is multiples of 3, 4 and 5
```

Example 3

```
Enter an integer number: 51684
4 + 8 + 6 + 1 + 5 = 24
24 is multiples of 3 and 4
```

Example 4

```
Enter an integer number: 2161
1 + 6 + 1 + 2 = 10
10 is multiples of 5
```

Note: The number in **bold** indicates input entered by the user.

Draw your flow chart using any appropriate drawing tools such as Microsoft Visio, Lucid chart (https://www.lucidchart.com/pages/examples/flowchart-maker), and draw.io (https://app.diagrams.net/).

SET 2

Construct a flow chart that reads an integer number and then calculate the sum of its digits. After that, identify whether the sum of digits for the integer is an even or odd number, and a multiple of 4, and/ or 5. ***Hint:*** You should use operator divide (/) and modulus (%) and also **pre-test loop** to answer this question.

Example 1

```
Enter an integer number: 1235
5 + 3 + 2 + 1 = 11
11 is odd number
```

Example 2

```
Enter an integer number: 6545
5 + 4 + 5 + 6 = 20
20 is even number & multiples of 4
and 5
```

Example 3

```
Enter an integer number: 89251
1 + 5 + 2 + 9 + 8 = 25
25 is odd number & multiples of 5
```

Example 4

```
Enter an integer number: 98762
2 + 6 + 7 + 8 + 9 = 32
32 is even number & multiples of 4
```

Note: The number in **bold** indicates input entered by the user.

Draw your flow chart using any appropriate drawing tools such as Microsoft Visio, Lucid chart (https://www.lucidchart.com/pages/examples/flowchart-maker), and draw.io (https://app.diagrams.net/).

SET 3

Construct a flow chart that reads an integer number and then calculate the product of its digits. After that, identify whether the product of digits for the integer is a multiple of 4, 5, and/ or 7. ***Hint:*** You should use operator divide (/) and modulus (%) and also **pre-test loop** to answer this question.

Example 1

```
Enter an integer number: 175
5 * 7 * 1 = 35
35 is multiples of 7 and 5
```

Example 2

```
Enter integer number: 9212
2 * 1 * 2 * 9 = 36
36 is multiples of 4
```

Example 3

```
Enter integer number: 2417
7 * 1 * 4 * 2 = 56
56 is multiples of 7 and 4
```

Example 4

```
Enter integer number: 61145
5 * 4 * 1 * 1 * 6 = 120
120 is multiples of 4 and 5
```

Note: The number in **bold** indicates input entered by the user.

Draw your flow chart using any appropriate drawing tools such as Microsoft Visio, Lucid chart (https://www.lucidchart.com/pages/examples/flowchart-maker), and draw.io (https://app.diagrams.net/).

SET 4

Construct a flow chart that reads an integer number and then calculate the product of its digits. After that, identify whether the product of digits for the integer is an even or odd number, and a multiple of 3, and/ or 5. ***Hint:*** You should use operator divide (/) and modulus (%) and also **post-test loop** to answer this question.

Example 1

```
Enter integer number: 351
1 * 5 * 3 = 15
15 is odd number & multiples of 3
and 5
```

Example 2

```
Enter integer number: 363
3 * 6 * 3 = 54
54 is even number & multiples of 3
```

Example 3

```
Enter integer number: 256
6 * 5 * 2 = 60
60 is even number & multiples of 3
and 5
```

Example 4

```
Enter integer number: 7442
2 * 4 * 4 * 7 = 224
224 is even number
```

Note: The number in **bold** indicates input entered by the user.

Draw your flow chart using any appropriate drawing tools such as Microsoft Visio, Lucid chart (https://www.lucidchart.com/pages/examples/flowchart-maker), and draw.io (https://app.diagrams.net/).