C5 – S1 – THEORY

**EXERCISE 1**

**PROBLEM:**

* Enter a number.
* Check if this number is in one of the bellow ranges:

1 to 10

29 to 51

76 to 101

* Print True if the number is in one of the ranges, print False otherwise.

**Q1** – Complete the missing outputs

|  |  |
| --- | --- |
| **INPUT** | **OUTPUT** |
| 11 | False |
| 50 | True |
| 88 | True |
| 30 | True |
| 101 | True |

**Q2** – Analyze the symbols you need to solve this problem

|  |  |  |
| --- | --- | --- |
| Element | Do you need it? | For what? |
| Action | no |  |
| Decision | yes | For check the number. |
| Repeat | no |  |
| Input / Output | yes | To print the result true or false. |

**Q3** – Create a flowchart to solve this problem.

**Q4** – **Execute** the flowchart: What is the result of your flowchart with those inputs?

|  |  |
| --- | --- |
| **INPUT** | **OUTPUT** |
| -1 | False |
| 0 | False |
| 8 | True |
| 11 | False |
| 15 | False |
| 29 | True |
| 35 | True |
| 75 | True |
| 80 | True |
| 110 | False |

**Q5** – Review the code and find **the error** and explain them.

# Check if a number is in one of the 3 ranges: 1 to 10 or 29 to 51 or 76 to 101

value = int(input())

inRange = False

if value >= 1 or value <= 10:

inRange = True

elif value >= 29 or value <= 51:

inRange = True

elif value >= 76 or value <= 101:

inRange = True

print(inRange)

**Q6** If this code is a valid code? Explain why

# Check if a number is in one of the 3 ranges: 1 to 10 or 29 to 51 or 76 to 101

value = int(input())

inRange = True

if value < 1:

inRange = False

elif value > 10 and value < 29:

inRange = False

elif value > 51 and value < 76:

inRange = False

elif value > 101:

inRange = False

print(inRange)

**Q7**– Write your own good code to solve this problem.

This time, you can us **1 condition** only