HANOI UNIVERSITY
Faculty of Information Technology

62FIT3SS1
Python Programming - Fall 2025
Assignment 1

An electronic ticket code is a unique identifier used to verify flight tickets in an airline booking system. In this assignment, you will develop a validation system for ticket codes with specific requirements. A ticket code is considered valid if it satisfies all of the following conditions:

- It must have exactly 8 characters.
- The first 3 characters must be uppercase letters [A-Z] (representing the airline code).
- The next 4 characters must be digits [0-9] (representing the flight number).
- The last character must be an uppercase letter or a digit.
- It must not contain three consecutive identical characters ("AAA1234B" is invalid).
- Airline code (first 3 characters) is not allowed:
  ["VNA", "BAM", "JET", "VJA", "AGR"].

Question 1 (5 points)

Write a Python function named `ticketValidator(code)` that validates a ticket code string against the above conditions. The function returns `True` if the ticket code is valid. The function returns `False` otherwise.

Examples:

`ticketValidator("GHG1234A")` returns `True`
`ticketValidator("HOT5678Z")` returns `True`
`ticketValidator("XYZ134AA")` returns `False`
`ticketValidator("VNA12AA3")` returns `False`
`ticketValidator("VNA1111B")` returns `False`

Question 2 (3 points)

Update the `ticketValidator` function into a new function named `ticketValidator2(code)`. If the ticket code is valid, the function returns the string

`"Valid"`. If the ticket code is invalid, the function returns `"Invalid"` followed by a list of reasons why the ticket code is invalid, separated by periods.
The possible reasons are:

- `"Ticket code must be exactly 8 characters"` if the code length is not 8.
- `"First 3 characters must be uppercase letters"` if the first 3 characters are not uppercase letters.
- `"Airline code is not allowed"` if the airline code is on the blacklist.
- `"Next 4 characters must be digits"` if the middle 4 characters are not digits.
- `"Ticket code contains three consecutive identical characters"` if the code contains three identical consecutive characters.
- `"Last character must be uppercase letter or digit"` if the last character is invalid.

Examples:

`ticketValidator2("GTR1234A")` returns `"Valid"`
`ticketValidator2("VNA1234A")` returns `"Invalid. Airline code is not allowed"`
`ticketValidator2("htr12AA3")` returns `"Invalid. First 3 characters must be uppercase letters. Next 4 characters must be digits"`
`ticketValidator2("VNA1111#")` returns `"Invalid. Airline code is not allowed. Ticket code contains three consecutive identical characters. Last character must be uppercase letter or digit "`

Question 3 (2 points)

Write a Python program that uses the `ticketValidator2(code)` function to create an interactive ticket code validation system. The program should:

- Prompt the user to input a ticket code.
- Use `ticketValidator2` to check the ticket code against the rules.
- If the ticket code is invalid, display the reasons and ask for a new ticket code.
- If the ticket code is valid, display a congratulatory message and stop the program.

```
Please enter a ticket code:
BAM1234A
Invalid. Airline code is not allowed
```

```
Please enter a ticket code:

VNA1111B

Invalid. Airline code is not allowed. Ticket code contains three consecutive
identical characters



Please enter a ticket code:

HOC1234A

Congratulations. Your ticket code is valid.
```

Submission Instruction

Please create a new folder named **62fit3ss1_assignment1_<your student ID>**. In the folder, create the following files:

- question1.py: contains your program code for Question 1
- question2.py: contains your program code for Question 2
- question3.py: contains your program code for Question 3

Please compress your folder into **62fit3ss1_assignment1_<your student ID>.zip** file and submit this file via the submission box in the LMS course website.