

Problem Set 4 Exercise #11: NRIC Check Code

Reference: Lecture 11 notes

Learning objective: Characters and Strings

Estimated completion time: 30 minutes

Problem statement:

Write a **non-OO** program **PS4_Ex11_ICCheckCode.java** to read a 7-digit positive integer representing a NRIC number and generate its check code.

The algorithm for generating NRIC check code is illustrated with the following example of NRIC number **8730215**.

Step 1: Multiply the digits with their corresponding weights **2, 7, 6, 5, 4, 3, 2** and add the products. Example: $8 \times 2 + 7 \times 7 + 3 \times 6 + 0 \times 5 + 2 \times 4 + 1 \times 3 + 5 \times 2 = 104$

Step 2: Divide step 1 result by **11** to obtain the remainder. Example: $104 \% 11 = 5$

Step 3: Subtract step 2 result from **11**. Example: $11 - 5 = 6$

Step 4: Match step 3 result in this table below for the check code.

Step 3 result	1	2	3	4	5	6	7	8	9	10	11
Check code	A	B	C	D	E	F	G	H	I	Z	J

Example: The check code corresponding to 6 is 'F'.

Your program should include a static method

```
char generateCode(int num)
```

that takes in an integer (the NRIC number) as parameter and returns a character (the check code of that NRIC number).

Use tips:

This exercise can be done without using array and string, but will result in a long-winded program. Can you make use of array and string to shorten your code?

Sample run #1:

```
Enter 7-digit NRIC number: 8730215  
Check code is F
```

Sample run #2:

```
Enter 7-digit NRIC number: 1234567  
Check code is D
```

Sample run #3:

Check against your own IC and report any discrepancy to the ICA.