Mỗi Program tạo 1 project riêng có tên theo quy định sau:
Tên Project: **<MASV>_Program**XX
Ví dụ: Sinh viên có masv: CE123456. Tên Project được đặt tên như sau:

CE123456_Program**01**
CE123456_Program**02**
CE123456_Program**03**
CE123456_Program**04**
CE123456_Program**05**
…..

Nén tất cả bài làm lại với tên: `submit.zip`

Sau đó submit bài làm (`submit.zip`) vào mục **Assignment/Lab02** trên EduNext.

Lưu ý các yêu cầu (tham khảo tiêu chí đánh giá các bài lab/assignment):

- Comment giải thuật đầy đủ,
- Format code,
- Thông tin phần author,
- .jar file,
- Output format.

Deadline: 24/09/2024, 23:59

Contents: 08 programs

Program 1 (1 mark)

Ask the user to enter a word.
Your code must check if the word starts with the letter 'A' or 'a' and print a message accordingly.

Example 1:	`Please enter a word: apple` `Yes, it starts with a lower case 'a'`
Example 2:	`Please enter a word: Abracadabra` `Yes, it starts with an upper case 'A'`
Example 3:	`Please enter a word: Toyota` `No, it dose not start with upper or lower case 'a'`

Program 2 (1 mark)

Ask the user to enter a colour.
Your code must print the first and the third letters in the colour.

Example 1:	`Please enter a colour: Purple`
	`The first letter is P`
	`The third letter is r`

Example 2:	`Please enter a colour: Yellow`
	`The first letter is Y`
	`The third letter is l`

Program 3 (1 mark)

Ask the user to enter their first name and their last name (surname).
Your code must print their initials (in upper case) as shown.

Example 1:	Please enter your first name: **John** Please enter your last name: **Doe** Result: J.D.
Example 2:	Please enter your first name: **Sheldon** Please enter your last name: **Cooper** Result: S.C.

Program 4 (1 mark)

Ask the user to enter a name and a number.
Your code must print the character at the number provided.

Example 1:	Please enter a name: **Donald** Please enter a number: **3** The letter at position 3 is a
Example 2:	Please enter a name: **Michael** Please enter a number: **6** The letter at position 6 is l
Example 3:	Please enter a name: **Bob** Please enter a number: **7** Sorry, that number is to big.

Program 5 (1 mark)

Ask the user to enter a word and a sentence.
Your code must check if the word can be found inside the sentence.
You can ignore case (upper or lower)
Hint: You can use the **.contains** method of the java.lang.String class.

Example 1:	Please enter a word: **dog** Please enter a sentence: **The Dog barked at me!** The word 'dog' is in the sentence.
Example 2:	Please enter a word: **cat** Please enter a sentence: **The lion has an orange mane.** The word 'cat' is not in the sentence.
Example 3:	Please enter a word: **BOD** Please enter a sentence: **bob, the builder does amazing work!** The word 'BOD' is not in the sentence.

Program 6 (1 mark)

Ask the user to enter a sentence that contains the word red within it.
Your code must replace all occurrences of red with the colour entered by the 2nd prompt, and print the modified sentence.
Hint: You can use the **.replace** method of the java.lang.String class.

Example 1:	`Please enter a sentence: The red car stopped at the traffic light`
	`Please enter a colour: blue`
	`The blue car stopped at the traffic light`

Example 2:	`Please enter a sentence: The blue car stopped at the traffic light`
	`Please enter a colour: white`
	`There is no 'red' word in the sentence`

Example 3:	`Please enter a sentence: The red car stopped at the traffic light`
	`Please enter a colour: white`
	`The white car stopped at the traffic light`

Program 7 (1 mark)

Your task is to create a program that checks the validity of a password entered by the user.
The user will enter a password (which your program will store in a variable). Your program must check this password against the following rules:

- Must be at least 8 characters long.
- Must not contains any spaces.
- Must begin with an uppercase letter G.

Your program must check the validity of the password entered against the above rules. It must tell the user if they entered a valid password.
If not, it must tell the user which of the rules their password did not meet

Example 1:	`Please enter a password: Kelly`
	`Your password is too short.`
	`Your password does not start with a 'G'`

Example 2:	`Please enter a password: G R E A T WORK` `Your password contains spaces.`

Example 3:	`Please enter a password: Hi Bob`
	`Your password is too short.`
	`Your password contains spaces.`
	`Your password does not start with a 'G'`

Example 4:	`Please enter a password: Gollycrumbchief` `Well done. You entered a valid password.`

Program 8 (3 marks)

Write a program that lets the user type in names. Each name that is entered should be stored in an **ArrayList** of type String. When the word "**quit**" (ignore case (upper or lower) is entered then the program should stop inputting names.

Print a list of all contestants using a “for each” loop to display the contents of your ArrayList

Then your program should generate **a random number** that could be any entry in the ArrayList and print out the name of the lucky winner. Hint: You must use the **get()** method.

Example 1:	`Please enter a name (quit to exit!): quit` `The player list is empty!`

Example 2:	`Please enter a name (quit to exit!): Dang Van Lam`
	`Please enter a name (quit to exit!): Bui Tien Dung`
	`Please enter a name (quit to exit!): Doan Van Hau`
	`Please enter a name (quit to exit!): Que Ngoc Hai`
	`Please enter a name (quit to exit!): Nguyen Quang Hai`
	`Please enter a name (quit to exit!): Do Hung Dung`
	`Please enter a name (quit to exit!): Nguyen Hoang Duc`
	`Please enter a name (quit to exit!): QUIT`
	`List of players:`
	`1. Dang Van Lam`
	`2. Bui Tien Dung`
	`3. Doan Van Hau`
	`4. Que Ngoc Hai`
	`5. Nguyen Quang Hai`
	`6. Do Hung Dung`
	`7. Nguyen Hoang Duc`
	`#. List of players with the last name 'Nguyen':`
	`1. Nguyen Quang Hai`
	`2. Nguyen Hoang Duc`
	`#. List of players named 'Dung':`
	`1. Bui Tien Dung`
	`2. Do Hung Dung`
	`#. The name of the lucky winner:`
	`Do Hung Dung`

--- THE END ---