

# BLM19103 / BLM22103 / BLM22105 Computer Programming I ve Computer Programming Laboratory

## Project #1

**Deadline:** 18.11.2022 – 23:59

In this project, you should write the program that terminates when the user enters "dur", "Dur" or "DuR" (for all variations), otherwise, depending on the user's choice, the program runs the relevant method. As long as the stopping conditions are not satisfied, the menu should be printed on the screen and the user should be make a selection.

### Example:

#### Project 1 User Menu

1. Print character sequence
  2. Convert uppercase
  3. Cipher and decipher
  4. Draw letter
1. Write the Java code that takes a set of characters from the user and draws the corresponding image. The 'b' character is used to print a blank character, the 's' character should be used to print the '\*' character, the 'n' character should be used to print a new line, and the 't' character should be used to print 3 spaces. A digit before any of these characters indicates how many times the character should be printed, if a character does not have a digit before it, the character should only be printed once. The method signature should be as follows.

```
public static void karakterDizisiCizdir(String input)
```

### Example:

#### Project 1 User Menu

1. Print character sequence
2. Convert uppercase
3. Cipher and decipher
4. Draw letter

Make a selection: 1

Enter the character sequence: 1b2sn2snt3snnbs

```
  **
**
  ***

*
```

2. Write a method that capitalizes the first letter of each word of the String entered by the user and returns the new String. The method signature should be as follows.

**public static String buyukHarfeCevir(String input)**

**Example:**

Project 1 User Menu

1. Print character sequence
2. Convert uppercase
3. Cipher and decipher
4. Draw letter

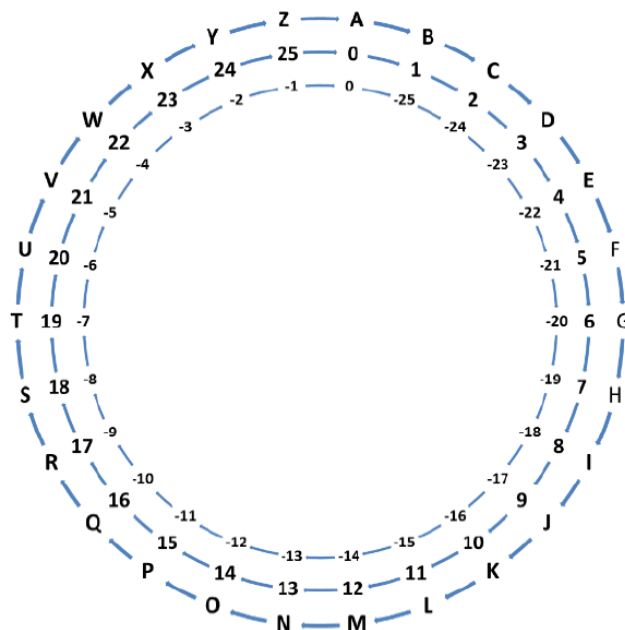
Make a selection: 2

Enter the sentence: First character of each word in this sentence should be uppercase

Output: First Character Of Each Word In This Sentence Should Be Uppercase

3. Write the method that encrypts and decrypts the String given by the user according to the shift value given by the user.
- a. All characters in the String value given as a parameter are converted to uppercase.
  - b. If the shift\_value sent as a parameter is positive, encryption is performed, and if it is negative, decryption is performed.
  - c. shift\_value can take values in the range of [-25, -1] or [1, 25].
  - d. Encryption and decryption operations are performed according to the given figure.
  - e. The method signature should be as follows.

**public static String sifreleCoz(String input, int shift\_value)**



### Example:

#### Project 1 User Menu

1. Print character sequence
2. Convert uppercase
3. Cipher and decipher
4. Draw letter

Make a selection: 2

Enter the sentence: Merhaba dünya

Enter the shift value: 3

Encrypted value: PHUKDED GXQBD

#### Project 1 User Menu

1. Print character sequence
2. Convert uppercase
3. Cipher and decipher
4. Draw letter

Make a selection: 3

Enter the sentence: PHUKDED GXQBD

Enter the shift value: -3

Decrypted value: Merhaba dünya

4. In this step, you should draw the letter X or Z on the screen in the given size using the '\*' character. The method you have written must satisfy the following requirements:

**public static void harfCizdir(String karakter, int boyut)**

- a. You must request a size value from the user. This value specifies the number of rows. The value entered must be an odd number and must be greater than or equal to 5. Apart from this, the message "Not valid" should be printed on the screen for the dimension values entered and a new value should be entered until the user enters a valid value.
- b. Get the character to be printed on the screen from the user. If the entered character value is X or Z, this character should be printed on the screen. Otherwise, the message "entered character is invalid" should be printed on the screen and the value should be entered until the user enters a valid character. In this function you should use for or while loops.

### Example:

#### Project 1 User Menu

1. Print character sequence
2. Convert uppercase
3. Cipher and decipher
4. Draw letter

Enter the character: A  
Character is invalid  
Enter the character: X  
Enter the size: 4  
Size is invalid  
Enter the size: 7

```
*      *  
 *    *  
  *  *  
   *  
  *  *  
 *    *  
*      *
```

#### Project 1 User Menu

1. Print character sequence
2. Convert uppercase
3. Cipher and decipher
4. Draw letter

Enter the character: B  
Character is invalid  
Enter the character: C  
Character is invalid  
Enter the character: Z  
Enter the size: 8  
Size is invalid  
Enter the size: 11

```

*****
          *
        *
      *
    *
  *
*
*
*
*
*****

```

### **Grading:**

- 1) Submission Format and Comments: 10 pts
- 2) Properly working Stop Condition: 10 pts
- 3) Endless menu: 10 pts
- 4) Functions: 70 pts
  - a. Print character sequence: 15 pts
  - b. Convert uppercase: 15 pts
  - c. Cipher and decipher: 20 pts
  - d. Draw letter: 20 pts

### **Requirements:**

- 1) You should add comment lines explaining the codes you have written.
- 2) You should write your name, surname and student number as a comment at the top of the Java file you will send.
- 3) Meaningful names should be chosen for variable and class names and naming rules should be followed.
- 4) Do not use other functions except equals(), charAt() and length() functions.
- 5) You have to .zip your source file(s) (with .java extension) into a main folder and upload it via the LMS web portal. Prepare your source codes with .java extension, source codes sent as Word or notepad documents are not evaluated. Assignments sent outside the system will not be accepted.

**Code sharing in assignments is strictly prohibited and is a disciplinary offence. Duplicate assignments will be graded as zero and the student will be considered unsuccessful in the course. You can benefit from the web or from different sources, but copying all the source codes from the source and submitting the assignment means copy homework.**

**Note: All your assignments and quizzes are controlled by an artificial intelligence-based plagiarism system, code sharing or web copy-paste assignments are determined directly.**