



**COM 252**

**OBJECT ORIENTED PROGRAMMING**

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Final Project

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In this project, I tried to do all of the instructions in the assignment as I understood. Please, forgive me if I misinterpreted the assignment because I never understood some of them, and I filled them out with my own interpretation so they wouldn't be empty. To tell you the truth, I really had a hard time doing it. When I first looked at the instruction, I didn't understand anything. I immediately started searching the internet and looked at the encryption examples. I wish I'd read the instruction well instead of looking at encryption techniques from the internet. Because I've dealt with a lot of things that aren't relevant to the project unfortunately. You may remember that I sent an e-mail about the algorithm types. I was on the wrong track then later I realized topic. I feel bad about the time I spent on those encryption techniques. Unfortunately, I lost a lot of time. If I come to the project, I'm glad you gave us that kind of hard homework' that's how I get a better grip on things.

Firstly, I created a skeleton for the project. I pictured in my head what I was going to do then I created the classes and the methods to write into them. There are two interfaces, name's IEncryption and IDecryption. Inside those interfaces two methods called String encrypt and String binEncr also IDecryption interface has these methods too. I implemented it to the necessary places with two concrete encryption algorithms. In Encrypt class, I implemented the interface which is IEncryption. Then I created two encryption algorithms. The first one is encrypt it's for Shift Encryption algorithm, second one is binEncr for Binary Encryption algorithm. Shift Encryption method, plaintext is the input message from the user the text that will see the process. Ciphertext is the encrypted message. There is a for loop, the operation going to be inside the loop. An integer between 0 and 25 representing the right shift of the character and it traverses each character in the plaintext. And inside the if condition, it first checks the character are between a and z then the condition okay it shifts right letter or character then it again checks if shifted character greater than z, reshifting inside the if condition. And when process is done it prints ciphertext I mean encrypted text. Binary Encryption method, first I did the internet research and I've seen it all for the first time there were so many different things and I didn't want to use them. So, I just thought simple. I'll take a string text and convert it into a binary number system. I also got help from stackoverflow in implementing this idea. Someone did exactly what I had in mind, it's worth saying I think. Inside the for each condition it's going to do the operations and for key again I used same techniques. Then print the binary encrypted text like 10101010. This is the Encrypt class encryption algorithms sendAll register and main methods in here.

Secondly, I created two classes which are General and Spy. In the General class, first I implemented the interface which is IDecryption. After implementing I just filled shift decryption method because I understood like this. Same encrypt algorithm, decrypted text is normal plain text and there is a

for loop, the operation going to be inside the loop. An integer between 0 and 25 representing the left shift of the character and it traverse each character in the plaintext. Also inside the if condition, it first check the character are between a and z then the condition okay it shift left letter or character then it again checks if shifted character lesser than a, reshifting inside the if condition. And also there is a write method. This method write the encrypted object in specific format to the file with name, message and key. In the Spy class, again implement the interface which is IDecryption. After the implementation, I did the same things in binary encryption method. I found and used the convert from byte to string formula. And it also has write method same as General class. Write encrypted objects specific format to the file.

Thirdly, I created Listener class but I'm not sure the chances are very high that I did wrong. I'm sorry for this if it is wrong. From what I understand I did. Accordingly, the person who will get the message I understand is that we will create people-person constructors or objects. So that, I create person constructor with name, message and secret key (key). I called getters and setter than write to the console with toString method.

Lastly, I created register method like previous projects. When application start console give a menu to the user if they want to register, login or exit. If the user enters for the first time, they must be registered. After successfully login, the program asks which operation do you want to do with options. First one is Shift Encryption and Decryption, second one is Binary Encryption and Decryption, last one is exit. And if you click one of them between algorithm program asks name message (for encrypt) and key then automatically convert the it's encryptions and decryptions. After the converting, it's saved him/her information to the listener and also file. My project is like that in short. I say over and over again, please donate me if I misunderstand the project task because there is a terrible feeling in myself that I did wrong things.

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Problems Javadoc Declaration Properties Console X
Encryper [Java Application] /Library/Java/JavaVirtualMachines/jdk1.8.0_131.jdk/Contents/Home/bin/java (Jun 9, 2020, 9:44:45 PM)
-----WELCOME TO TOPRAK SECURITY SYSTEM-----
*****
Please Click 1 to log in, 2 to log out, and 3 to log out.

(1) Register, (2) Login, (3) Exit
1
Enter a new username:
gorkemiau
Enter a new password:
12345
*****
(1) Register, (2) Login, (3) Exit
2
Enter your username:
gorkemiau
Enter your password:
12345
Login successful.
*****

(1) Shift Encryption and Decryption, (2) Binary Encryption and Decryption, (3) Exit to Save
1
Enter name:
gorkem
Enter text for Shift Encryption:
theattackwillstart
Enter the Key:
1
Encrypted Message: uifbuubdlxjmmtubsu
Key is : 1
Decrypted Message: theattackwillstart
Listener: [name=gorkem, message=theattackwillstart, key=1]
(1) Shift Encryption and Decryption, (2) Binary Encryption and Decryption, (3) Exit to Save
```

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Encryper [Java Application] /Library/Java/JavaVirtualMachines/jdk1.8.0_131.jdk/Contents/Home/bin/java (Jun 9, 2020, 9:51:24 PM)
-----WELCOME TO TOPRAK SECURITY SYSTEM-----
*****
Please Click 1 to log in, 2 to log out, and 3 to log out.

(1) Register, (2) Login, (3) Exit
2
Enter your username:
gorkemiau
Enter your password:
12345
Login successful.
*****

(1) Shift Encryption and Decryption, (2) Binary Encryption and Decryption, (3) Exit to Save
2
Enter name:
gorkem
Enter text for Binary Encryption:
gorkem
Enter the Key:
toprak
Encrypted: 01100111 01101111 01110010 01101011 01100101 01101101
Key is: 01110100 01101111 01110000 01110010 01100001 01101011
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Decrypted key: 01110100 01101111 01110000 01110010 01100001 01101011
Decrypted Message: gorkem
Listener: [name=gorkem, message=gorkem, key=toprak]
(1) Shift Encryption and Decryption, (2) Binary Encryption and Decryption, (3) Exit to Save
```