Hyperiondev

TASK

Capstone Project II — Arrays, Functions, and String Handling

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Introduction

This project will consolidate the knowledge that you've gained across various tasks. In this project, you will be creating a way to encode messages. Remember, it is worth putting some extra time and effort into this project — it can become part of your developer portfolio.

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Remember that with our courses, you're not alone! You can contact an expert code reviewer to get support on any aspect of your course.

The best way to get help is to login to Discord at **https://discord.com/invite/hyperdev** where our specialist team is ready to support you.

Our expert code reviewers are happy to offer you support that is tailored to your individual career or education needs. Do not hesitate to ask a question or for additional support!

DEVELOPER PORTFOLIO

Developers who have the edge are those who find ways to apply their new-found skills from the get-go. A **developer portfolio** (a collection of software that you have made) allows you to demonstrate your skills rather than just telling people about them. It's a way of bringing your CV to life and introducing yourself to the world. As you learn more skills and put these into practice, each project that you complete will become more efficient and eye-catching.

This application series offers you the means to create the first project of your very own developer portfolio, allowing you to walk away from this course not only with a certificate but, more importantly, with a headstart into your career!

THE TASK AT HAND

In this task, you are going to create a cypher to write up secret messages! A cypher is a way of applying a particular algorithm to encode a message. For example, if we used the numerical equivalent of each letter instead of the letter itself, we could write "Hello" as 8-5-12-12-15. You can read more about cyphers **here**.

In this task, you will be creating a type of Caesar cypher. This is where you use an algorithm to make one letter represent another letter. Have look at the image below:
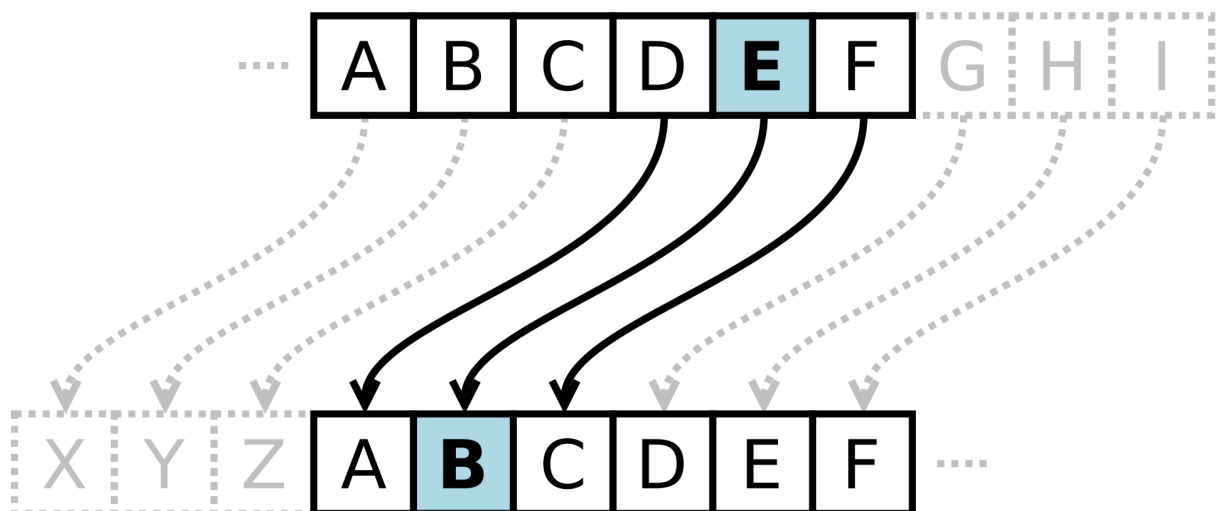

*Image source: **http://en.wikipedia.org/wiki/File:Caesar3.png***

In this image, you can see that the letters are shifted left by 3. So "DEF" would be coded as "ABC". You can read more about Caesar cyphers **here**.

<u>Before you begin</u>

A key focus of this project will be ensuring that your code is correct, well-formatted and readable. In this regard, make sure that you do the following before submitting your work:

1. Make sure that you have identified and removed all syntax, runtime and logical errors from your code.

2. Make sure that your code is modular. Create functions to perform specific units of work.

3. Make sure that your code is readable. To ensure this, add comments to your code, use descriptive variable names and make good use of whitespace and indentation.

4. Make sure that your code is as efficient as possible. How you choose to write code to create the solution to the specified problem is up to you. However, make sure that you write your code as efficiently as possible.

5. Make sure that all output that your program provides to the user is easy to read and understand. Labelling all data that you output (whether in text files or to the screen) is essential to make the data your program produces more user-friendly. For example, compare the readability of the outputs in the images below. Notice how using spacing and labelling the output makes the second output much more user-friendly than the first:

Output 1:

```
Assign initial tasks, admin, 10 Oct 2019, 25 Oct 2019, No, Use
taskManager.js to assign appropriate tasks to each team member
```

Versus Output 2:

```
_____
Task:                   Assign initial tasks
Assigned to:            admin
Date assigned:          10 Oct 2019
Due date:               25 Oct 2019
Task complete?          No
task description:       Use taskManager.js to assign appropriate tasks
to each team member

_____
```

Compulsory Task

Follow these steps:

- Create a JavaScript file called **cypher.js**.
- Your cypher is going to use the 15th letter after the letter you want to use. For example, 'a' will be 'p'. Bear in mind that the letters are treated as cyclical. That means that 'p' will be coded to 'e' (the 10th letter after 'p' is 'z', so 5 letters after that will be 'e' because the cycle starts again).
- Create a function that will encode any message you give it.
- Print out the encoded message.
- *A few things to note:*
  - *You may not simply create an array of the alphabet!*
  - *You may need to do some research on how to turn a letter into a number.*
  - *Be aware of what happens with capital versus lower case letters. You need to account for this.*
  - *Spaces and punctuation marks need to stay the same when encoded. So a space will remain a space, a full stop will remain a full stop, etc.*

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