

# Bonus assignment week 5–6: Crack the code

Course ‘Imperative Programming’ (IPC031)

## 1 Assignment

On Brightspace you find the file “`assignment-05-bonus-files.zip`” that contains a text file “`secret.txt`” that is encrypted with OTP using a secret initializing value  $R$ . It is your task to design and implement a program that decrypts this text file and uncover what value  $R$  has been used. The name of the decrypted text file must be “`source.txt`”. The only information known about the source text is that it is written in English.

## 2 Products

As product-to-deliver you only need to upload the following documents:

- Your implementation of the algorithm in “`main.cpp`”.
  - In addition, we want to know which secret number  $R$  was used to produce the encrypted text file “`secret.txt`”. Include this information in your “`main.cpp`” as a comment.
- Additional unit tests in “`main_test.cpp`”, if applicable.
  - Consider testing auxiliary functions.
  - Consider testing if your solution produces the correct  $R$  once you have identified it.

## Deadline

**Bonus assignment:** Friday, October 11, 2024, 23:59h

### Important notes:

1. check that you have actually submitted your solution in Brightspace.
2. the deadline is firm, and it is impossible to upload a solution after expiry. In that case you fail the assignment.
3. you can upload solutions to Brightspace several times, but only the last submission is stored.
4. identify yourself and your lab partner in every uploaded document. The identification consists of your first and last names, student numbers, and number of (sub) assignment. By identifying yourself, you declare that the uploaded work has been created solely by you and your lab partner.
5. your work will be judged and commented upon. We expect that you obtain the feedback, read it, and use it to for the next exercises.
6. it is essential that you only submit your own solution, never copy somebody/something else’s solution, and never share your solution—in particular: **AI tools (including but not limited to Github Copilot or ChatGPT) are not permitted**, solutions from previous year cannot be reused, and finally, you and your lab partner take joint responsibility for the assignment you submit.