Cryptography Questions on Stackoverflow

If you are filling this survey, then you probably asked a Java cryptography-related question on StackOverflow before. We are a group of researchers from TU Darmstadt, Germany, who are developing tools to help (non-crypto expert) developers use cryptography in their Java applications. We want to understand what cryptography tasks you usually need to do, what difficulties you face, and what would help you use cryptography more correctly/efficiently.

This survey consists of 6 multiple choice questions and 4 free-text questions. All free-text questions are optional for your convenience, but we would highly appreciate your input. Your participation is anonymous and voluntary.

If you have any questions or comments about this survey, please contact Sarah Nadi (nadi@st.informatik.tu-darmstadt.de)

* Required

1. **What is your current occupation?** *
   Mark only one oval.

   ( ) Undergraduate student

   ( ) Graduate student

   ( ) Academic researcher

   ( ) Industrial researcher

   ( ) Industrial developer

   ( ) Freelance developer

   ( ) Other: ....

2. **How many years of Java programming experience do you have?** *
Mark only one oval.

( ) 11+

( ) 6 - 10 years

( ) 2 - 5 years

( ) 1 - 2 years

( ) < 1 year

Background about Cryptography Use

3. **Rate your background/knowledge about cryptography concepts such as encryption, digests, signatures, etc.** *
Note that this is knowledge from an end-user perspective and does not necessarily include knowing how the underlying mathematics work
Mark only one oval.

( ) Not knowledgeable - I do not know anything about cryptography

( ) Somewhat knowledgeable - I have a vague idea about the various areas of cryptography and what they are used for

( ) Knowledgeable - I am familiar with the various areas of cryptography and what they are used for

( ) Very knowledgeable - I know all/most areas of cryptography, the different available algorithms, and what they are used for

( ) Other: ....

4. **How often do you need to use cryptography in your software applications?** *
Mark only one oval.

( ) Never

( ) Rarely - I need cryptography for less than 33% of the software applications I develop

( ) Occasionally - I use cryptography in more than 33% but less than 66% of the software applications I develop

( ) Frequently - I need cryptography for more than 66% of the software applications I develop

5. **What kind of cryptography-related tasks do you usually implement in your applications ?** *

Examples include storing passwords, encrypting files, etc. List complex scenarios, if applicable

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StackOverflow Question

Thinking of the question(s) you posted on StackOverflow, please answer the following questions

6. **How much effort did you go through before resorting to posting your question?** *

Mark only one oval.

( ) I spent nights trying to figure this thing out!

( ) I spent a few hours reading resources and trying a few things here and there

( ) I had a quick look at some APIs, but didn't really understand much

( ) Didn't spend much time to be honest. Stackoverflow just seemed like a reasonable place to start.   *After the last question in this section, skip to question 10.*

( ) Other: ....

7. **Describe the steps you took to try to solve the problem yourself before resorting to StackOverflow.**

This can include resources you read, experimenting with code, etc.

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8. **What obstacles made it difficult for you to accomplish your tasks? Obstacles can have to do with the API you were trying to use, with your background, with learning resources, etc. List the three most important obstacles, in order of importance (1 being the biggest obstacle). Please be more specific than the general categories mentioned here.**

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Obstacles

9. **Rank the following obstacles to using cryptography in your applications where 1 is the biggest obstacle.**

   You can leave a row empty if you do not view it as an obstacle. You can mark multiple obstacles with the same rank.
   Mark only one oval per row.

	1	2	3
Identifying which concepts (e.g., encryption vs hashing) and algorithms (e.g., AES vs DES) to use	⬭	⬭	⬭
Identifying which Java libraries to use	⬭	⬭	⬭
Identifying how to use the APIs of the identified library	⬭	⬭	⬭

Support Tools

10. **What do you think would be a useful tool/technology/idea that can help you complete your cryptographic tasks more correctly, efficiently, etc.?**

How can we make your life easier in general when it comes to using cryptography in your application ?

11. **Any other comments or information you would like to tell us?**

Personal Info

You can optionally provide your name here. This is completely optional and will not be disclosed or published at any time. This may only help us relate your survey answers to the question(s) you asked on Stackoverflow and your expertise in general.

12. **Name**

13. **Email address**

Only fill if you would like to receive updates about the results of our study or about any related tools we develop

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