Welcome to this survey from the universities of Lancaster, Hannover and Padaborn. Your responses will help developers in the future to produce more secure apps.

Please select the arrow to start.

Are you working in a team with others, such as developers, testers, project managers?

- Yes (23)
- No (24)

Skip To: End of Block If Are you working in a team with others, such as developers, testers, project managers? = No
Q5 What is your role?

- Programmer (creates code) (1)
- Tester/QA Engineer (tests apps) (2)
- Project Manager (3)
- Non-specific (whatever it takes) (4)
- Don't know (5)
- Other (6) ________________________________

Q6 What other roles apart from yourself are there in your team?

- Programmer (creates code) (1)
- Tester/QA Engineer (tests apps) (2)
- Project Manager (3)
- Non-specific (whatever it takes) (4)
- Don't know (5)

Q7 About how many people (including developers, project managers, testers) are there in your team?

________________________________________________________________

End of Block: Team

Start of Block: Development
Q8 Please select all the ways you use to develop Android apps:

- [ ] Native Java (193)
- [ ] JavaScript (e.g. Cordova) (194)
- [ ] C# (Xamarin) (195)
- [ ] Dart (Flutter) (202)
- [ ] Python (196)
- [ ] Kotlin (197)
- [ ] Lua (Corona) (198)
- [ ] Native C/C++ (199)
- [ ] Other (200)

Skip To: Q10 If Please select all the ways you use to develop Android apps: != Other

Q9 What other ways to you use to develop Android apps?

________________________________________________________________

X+
Q10 How often did you release a new version of your app over the past two years? Please give your best estimate; if you have more than one app, please answer for that app that was most frequently updated.

- Never (0)
- Annually (1)
- Quarterly (2)
- Monthly (3)
- More frequently (4)

Skip To: End of Block If How often did you release a new version of your app over the past two years? Please give your bes... = Never

Q11 Over the last one to two years, what content has been in your app updates?

<table>
<thead>
<tr>
<th></th>
<th>Rarely</th>
<th>Half the time</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>New features ()</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-security bug fixes ()</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Security bug fixes ()</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Third party library updates ()</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regular maintenance and refactoring ()</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

End of Block: Development

Start of Block: Development priorities
Q12 How important is each of the following for your app(s)?

<table>
<thead>
<tr>
<th>Feature</th>
<th>Extremely important (4)</th>
<th>Very important (3)</th>
<th>Moderately important (2)</th>
<th>Slightly important (1)</th>
<th>Not at all important (0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Runs on many different devices (33)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secure against malicious attackers (34)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protects users' privacy (35)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Easy to use (36)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supports many features (37)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Runs smoothly (38)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q13 How important is security for sales?

- [ ] Extremely important (4)
- [ ] Very important (3)
- [ ] Moderately important (2)
- [ ] Slightly important (1)
- [ ] Not at all important (0)
Q14 How knowledgeable do you consider yourself about information security?

- Extremely knowledgeable (4)
- Very knowledgeable (3)
- Moderately knowledgeable (2)
- Slightly knowledgeable (1)
- Not knowledgeable at all (0)

Q15 Does your app development ever get support from professional security experts?

- Yes (1)
- No (0)
- I don't know (99)

Q16 Who are these professional security experts?

- Someone on your team (1)
- Someone external (2)
Q17 What support do you get from them? Please select all that apply:

- Penetration testing (1)
- Security training (2)
- Audits (3)
- Design reviews (4)
- Working on team (5)
- I don't know (6)

- Other - please say what: (7)

Q18 About how often do you get support from them?

- Continuously (5)
- Weekly (4)
- Monthly (3)
- Quarterly (2)
- Yearly (1)
- Don't know (99)

End of Block: Your approach to security
Q19 Which of the following have led to changes in the security of your app(s) in the past one to two years? Please select all that apply:

- Decision from management (1)
- Security crisis within your organisation (2)
- Media coverage about app security (3)
- Something bad happening to a competitor (4)
- Pressure from a partner company (5)
- Drive from product or sales team (6)
- Pressure from customers (7)
- Developer initiative (8)
- GDPR requirements (9)
- Something bad almost happening to your organisation (10)

Skip To: End of Block If Which of the following have led to changes in the security of your app(s) in the past one to two... != GDPR requirements
Q20 What changes have you made as a result of GDPR requirements?

☐ Addition of popup dialog(s) (1)

☐ Removal of analytics or advertising based on it (2)

☐ Adding or changing privacy policy (3)

☐ Other (please say what): (4)

________________________________________________

End of Block: What caused changes

Start of Block: Team techniques
Q21
How much do you use each of the following techniques to find security problems?

<table>
<thead>
<tr>
<th>Technique</th>
<th>Every build (4)</th>
<th>Every release (3)</th>
<th>Done once or occasionally (2)</th>
<th>Decided not to use (1)</th>
<th>Haven't considered it (0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Producing a threat assessment for the app</td>
<td></td>
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<tr>
<td>Scanning code with an automatic code review tool</td>
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<tr>
<td>Using a tool to scan for libraries with known vulnerabilities</td>
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<tr>
<td>Code review by someone other than the developer</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Penetration testing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q22 What other techniques do you use (if any)?

________________________________________________________________________
Q23 Do you have a security champion within your team? A security champion -- or security hobbyist -- is a non-expert, who takes a particular interest in security.

- Yes (1)
- No (0)
- I don't know (99)

End of Block: Team techniques

Start of Block: About your programming

Q24 For how many years have you been developing Android apps?

______________________________

Q25 For how many years have you been programming in general (not just for Android)?

______________________________

Q26 About how many Android apps have you helped develop in total?

______________________________

Q27 Is developing Android apps your primary job?

- Yes (23)
- No (24)
Q28 Have you contributed to an open source project in the past year?

- Yes (23)
- No (24)

End of Block: About your programming

Start of Block: About you

Q29 To which gender identity do you most identify?

- Female (1)
- Non-binary (3)
- Male (2)
- Prefer not to say (4)

Q30 What is the main spoken language you use at work?

- English (29)
- Chinese (30)
- Spanish (31)
- Arabic (32)
- German (33)
- French (34)
- Other (35)
Q31 In which country do you currently reside?

▼ Afghanistan (1) ... Zimbabwe (1357)

End of Block: About you

Start of Block: And finally

X-

Q32 Please click here if you would like us to send you the results from the survey

☐ Yes please (1)

Q33 Please click here if we may keep your email to approach you for future surveys

☐ Yes please (1)

End of Block: And finally