DRONACHARYA
College of Engineering

CRACKING GSOC AND INTRODUCTION TO OPEN SOURCE

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AGENDA (OPEN SOURCE SOFTWARE)

- What is Open Source Software?
- Benefits of using Open Source Software
- FOSS and Four Essential Freedom's of Free Software
- Popular Open Source Projects
- Why should you contribute to OSS
- Impact of OSS in present world
- Getting Started with an OSS project

AGENDA (CRACKING GSOC)

- Cracking GSOC
- Benefits of Participating in GSOC
- How to Participate in GSOC
- Important points for Cracking GSOC

OPEN SOURCE

WHAT IS OPEN SOURCE SOFTWARE?

- Open Source : Source which is accessible to everyone (public domain).
- Class of software products whose source code is released under a license that allows users to use, change, redistribute or contribute for free.
- Anyone can contribute to the project

CRITERIA'S TO COMPLY

- Free Redistribution
- Source Code
- Derived Works
- Integrity of Author's source code
- No discrimination against Persons or Groups
- No discrimination against Fields of Endeavor
- Distribution of Licence
- Licence **Must** not be specific to a product
- Licence **Must** not Restrict other Software
- Licence **Must** be Technology-Neutral

BENEFITS OF OPEN SOURCE SOFTWARE?

- Security
- Ease of modification
- Transparency
- Community support
- Most Open Source Software products can be ported to the platform of our choice even if it is not supported on that platform (This ofcourse requires the source code to be portable in nature)

FOSS (FREE AND OPEN SOURCE SOFTWARE)

- Software products that allow the user to do whatever they want to do with the programs (use, distribute, contribute etc)
- Free Software != Open Source Software in all cases
- Free and Open Software adheres to both the principles
- Free Software has a philosophical perspective
- Open Source Software describes the practical side of things

FOUR ESSENTIAL FREEDOM'S OF FREE SOFTWARE

Freedom 0 : The freedom to run the program as you wish

Freedom 1 : Freedom to study how the program works and change it so it does your computing as you wish.

Freedom 2 : Redistribute copies so you can help others

Freedom 3 : Freedom to distribute copies of your modified versions to others

Is Android a Free and Open Source product?

Is Visual Studio Code a Free and Open Source product?

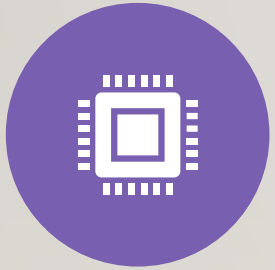
LICENCES FOR OSS

- Licences are important for an OSS project.
- It decides how your software can be used, modified etc.
- If you are not sure which licence to choose from visit https://choosealicense.com/

POPULAR OPEN SOURCE PROJECTS

VSCode : A simple, easy to use IDE that supports a variety of programming languages.

React : One of the most popular UI frameworks for the web.



GCC : Compiler collection for variety of programming languages

LLVM : Infrastructure for Compilers

WHY SHOULD YOU CONTRIBUTE TO OSS?

- Exposure to the Industry
- Teaches you Team Work and Collaboration
- Technical Upskilling
- A cherry on your Resume ☺

IMPACT OF OSS IN THE PRESENT WORLD

- In a study conducted by Synopsys (2015) it was found that :
  - 78% of companies use OSS
  - 64% of companies also participate in the development of OSS
  - 66% of companies consider using OSS before using its alternatives

GETTING STARTED WITH AN OSS PROJECT

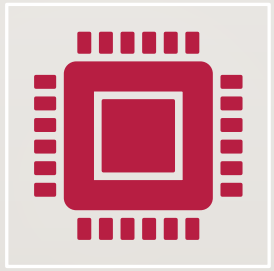
STEP 1	Select a code hosting service for hosting your project.
STEP 2	Create a repository that will contain your code.
STEP 3	Create a README file that explains about your project ☺

GETTING STARTED WITH AN OSS PROJECT

STEP 4	Set up a community so that collaborators can discuss and work on different parts of the project
STEP 5	Publish blogs related to your OSS project to increase the audience
STEP 6	Once you are ready with the first version (https://semver.org/), create a package or a release which will allow other users to use your software.

LIMITATIONS OF OPEN SOURCE SOFTWARE

Being decentralized, Open-Source Software is difficult to maintain.



Many companies use outdated version of Open-Source Software packages that might contain vulnerabilities.

The revenue earned from Open-Source Software is comparatively less than the Closed Source Software

CRACKING GSOC

WHAT IS GSOC ?

- Annual program conducted by Google where Google offers attractive stipends and memberships in exchange for completing a free and open source software coding project during summer.
- Open to university students aged 18 or over.
- Stipend varies around $1500 to $3000 (₹1,08,000 to ₹ 2,16,000)
- Program duration is around 3-6 months

Attractive Stipend

Free 1-year LWN

1 time referral for interviews at Google (Internship / Job)

Chance to work with some of the best developers around the globe

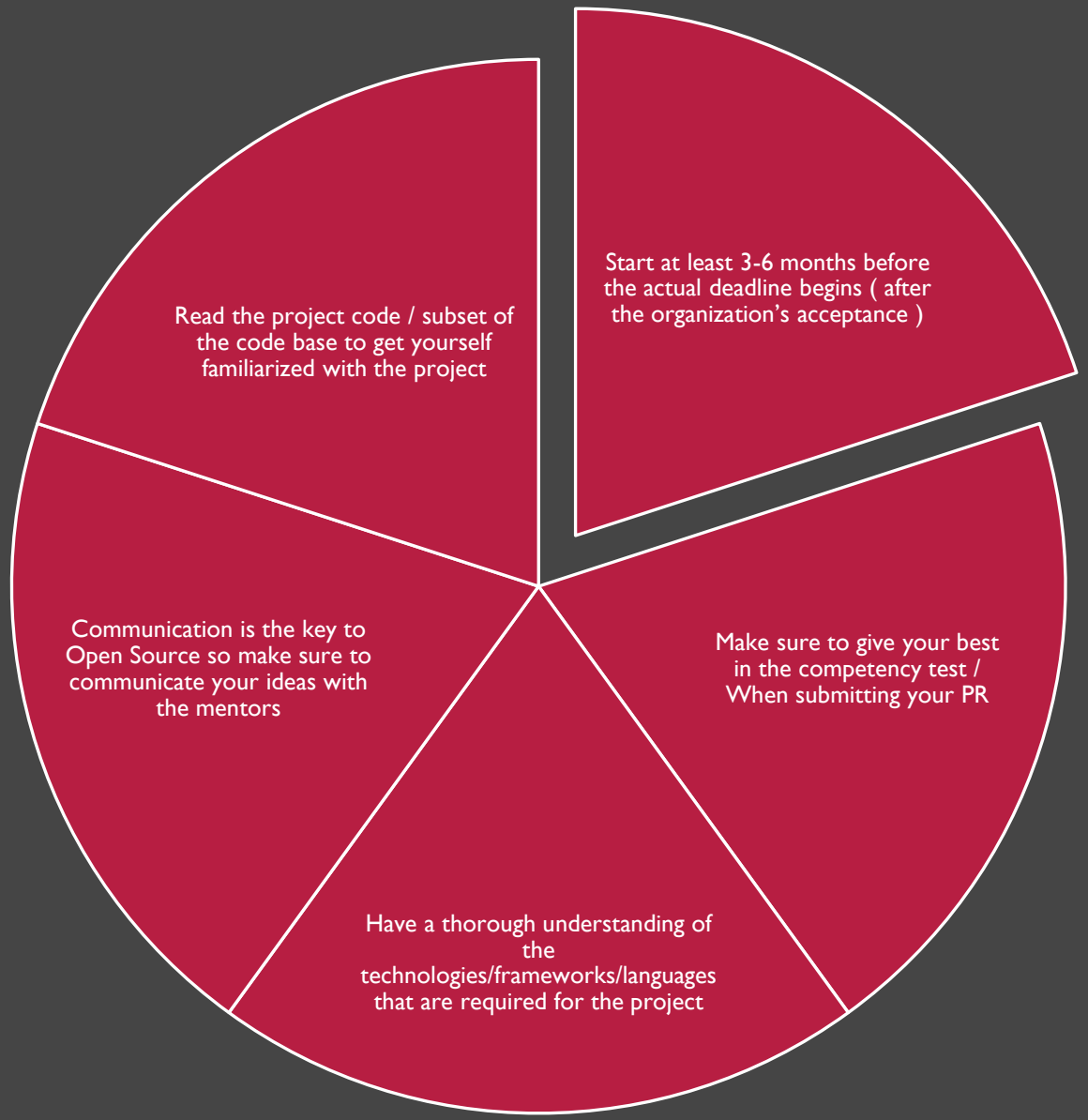
Highly valued by companies and start-ups around the globe

BENEFITS OF PARTICIPATING IN GSOC

HOW TO PARTICIPATE IN GSOC ?

Head over	https://summerofcode.withgoogle.com/archive/
Select	Organization to contribute to
View	List of projects and check out the mailing list to find out which projects to work on
Communicate	With mentors(ask them about the project, your views on the project, possible contributions you can make)
Complete	Competency test or submit a few PR's suggesting improvements as a prerequisite.
Start	Writing a proposal (at most 3) and obtain feedback from the mentors if possible about the drafts

IMPORTANT POINTS FOR CRACKING GSOC



IMPORTANT POINTS FOR CRACKING GSOC

Follow the principles of organization while writing code (If not sure do ask the mentors)

Measure twice, cut once

Whenever you suggest an improvement into the codebase, make sure to back it up with a benchmark to show the impact

PDF FOR THE SLIDES CAN BE FOUND AT :

- https://github.com/gopi487krishna/orientation-2021

THANKYOU ☺