

A low-angle photograph of a modern building with a large glass facade and a concrete structure. The Google logo is mounted on a dark, slanted section of the building. The text "Summer of Code" is overlaid in a green, italicized font. In the bottom right corner, the name "Pradeeban Kathiravelu, Ph.D." and the affiliation "University of Alaska Anchorage" are displayed in white text.

Google

Summer of Code

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Disclaimer

- This presentation is for Google Summer of Code (GSoC) 2024.
 - Based on the past observations.
- Future GSoC rules may change.
 - Pay attention to GSoC official rules.



Intro to me

(a.k.a. My GSoC Journey)

GSoC didn't limit how many times one can be a contributor (student) back then.

- 2009: Student (Contributor)/AbiWord
- 2010: Student (Contributor)/OMII-UK
- 2011* and 2013: Mentor/AbiWord
- 2014 and 2015: Student (Contributor)/Emory BMI
- 2016: Mentor/Emory BMI
- 2019*: Primary Org. Administrator/Emory BMI
- 2020: Founding Org. Administrator/caMicroscope
- 2021–2023*: Primary Org. Administrator/Emory BMI
- 2011, 2019, and 2023: *Represented the organization at the Mentor Summit.



Contents

- Why GSoC?
- Before you begin...
- Right Project?
- Apply.
- Code.
- Conclude/Continue.
- What Else?



Today you will hear a lot about...

- Google
- Mentoring organizations (such as Django and Apache).
- Mentors (Mentors, co-mentors, and organization administrators).
- Contributor (previously known as the “student”). i.e., you.
- Project proposal.

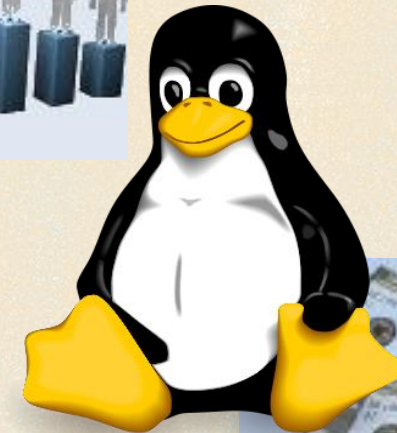


Why GSoC



- Code for your preferred open source project for 3 months.

- And get **individually** mentored and
- Open for all the adults (18+) from 2022
 - Not only for students.



- Also anyone who is an *open-source beginner*.

Stipends

- Based on your residence location and size of the project.
 - Large Size Projects / Full-time
 - (35 hrs/week) / 350 hours in total.
 - 3000 – 6600\$.
 - For US residents, ~17\$/hour, 6000\$ in total.
 - (Not a lot, but that is okay!)
 - Medium Size Projects / Half-time
 - (17.5 hrs/week) / 175 hours in total.
 - 1500 – 3300\$.



Google Summer of Code (GSoC)

- **As an individual**, code for an open-source organization for 3 months.
- Apply up to 3 of your favorite project ideas from the published ideas pages from the organizations.
 - But only one will be accepted at most. (GSoC is competitive).
- Have not participated in GSoC as a contributor more than once!
- Google coordinates and rewards you!
 - Getting Accepted.
 - 2 milestones.
 - First Evaluation. (45% of the stipend)
 - Final Evaluation. (55% of the stipend)
 - A completion certificate!



Some statistics of 2023

- 171 Organizations
 - 2,400 mentors (and co-mentors) and organization administrators.
- Applications
 - 43,765 from 148 countries.
 - 7,723 proposals. (this means many gave up without even applying!)
- Accepted
 - 967 contributors/projects from 65 countries.
- Completed successfully
 - 80%+ of accepted contributors.
 - Extended projects are still ongoing.



The success rate *is high!*

- Getting accepted is the challenge.
 - ~2% from the pool of potential applicants.
 - ~17% of the submitted proposals.
- Most accepted contributors passed the final evaluations
 - In 2019, 1,276 contributors applied and 1,134 completed successfully!
 - Success rate – 88.87%.



The challenge is not just coding!

Goal for this presentation today

- Getting accepted to GSoC.
- Once accepted, completion is – to work on your project.
 - You will have an assigned mentor (or 2 or 3 mentors!).
 - Work with them, following their advice.



Why many proposals end up rejected?

- Obvious reason:
 - We cannot accept everyone.
 - Not enough \$\$\$ (Google funds the mentoring organizations).
 - Not enough mentoring resources.
 - Not enough project ideas.
- Less obvious reason:
 - Not all proposals are made with care!



How to make sure you have a chance?

- Follow the proper application template.
 - Don't just send your CV. There is an application involved!
- Follow the expectations of the mentoring organization.
- Be a **pleasant** person.
 - We are all volunteers in open-source mentoring.
 - We are selective in who to mentor.



What do you need?



Timeline (2023)

- Feb 7th – **Feb 21st**: Organizations apply.
- Feb 22nd: Accepted organizations announced.
- March 20th – **April 4th**: Contributor application period.
- **May 4th**: Accepted contributors announced.



Timeline..

After getting accepted

- May 4th: Community Bonding Period Begins.
- **May 29th: Coding Starts!**
- July 10th – **July 14th**: Mid Evaluation.
- Aug 21st – **Aug 28th: Final Submission.**
- Extended time for coding.
 - Plan with your mentor if you need additional time to finish your project.
- **Nov 6th: Contributor “Final” (Extended) Final Submission.**



Before you begin..

- Google Summer of Code is all about being Open Source.
- Get your basics and motivations right.
 - It has more **community** appeal than just coding!
- Learn the open-source technologies and netiquettes.
- Join the relevant communication channel.



Technologies

- Version Control Systems
 - Mostly git these days. (svn, mercurial, cvs, ...)
- Build Tools
 - Maven, Ivy, Ant, ..
- IDEs (Integrated Development Environments)
 - IntelliJ IDEA, Eclipse, ..
 - Microsoft Visual Studio ..
- Issue Tracker
 - GitHub, Jira, Bugzilla, Trac, ..



Communicating with the organization developers

and the mentor, over the Internet

- Mailing Lists: Dev, User, Commit lists, sub-groups, ..
- Real-time communication: Slack, Discord, Internet Relay Chat (IRC), ...
- Issue Tracker
- Forums and wiki
- Blogs
- Zoom, Personal emails, conference calls, .. with the mentors
[only if they suggest that.]



Effective messages: Be specific

- Brief and clear.
- No need to be unnecessarily verbose and apologetic.
 - “I am sorry for this email. I am really stuck in this step. I wonder if you have time to answer my question. It is very urgent for me. I urgently need your help. I know you are also very busy. But maybe you can still help me. I will be eternally grateful...” **No.**
 - “Hi FIRSTNAME, I am applying for GSoC project idea 14. But I am stuck at step-2 in its description. It throws a ResourceNotFound Error when I run the script. Am I doing something wrong? Full log is attached herewith.”



Effective messages: At once!

- Come to the point without long back-and-forth small-talk.
 - Student: Hi
 - Mentor: Hi!
 - S: How are you
 - S: ?
 - Mentor: (no response)
 - S: You there?
 - S: Hope you are doing great!
 - Mentor: (no response)
 - S: I am working on GSoC!
- Student: Hi FIRSTNAME, I am applying for GSoC project idea 14. But I am stuck at step-2 in its description. It throws a ResourceNotFound Error when I run the script. Am I doing something wrong? Full log is attached herewith.
- Mentor: Hi! Thanks for reporting. You should install these (docs link) libraries first. Then, please retry. It will work. I have fixed the documentation now.²¹



Network Etiquettes

- **Don't take (short and impersonal) replies personally.**
- Research (google.. ;) before asking.
- Be effective in communication.
- Be helpful to others.
- Be **ethical**; respect.
- NO CAPS! (UNLESS YOU ARE SHOUTING!)
- Dn't snd ur sms msgs.
- Language/English



Proper Addressing

- Address the mentors and other members properly.
 - First Name or Preferred calling name.
 - NO Sir, Madam, bro, sis, pal..
 - Even if you know them, personally.
 - Not too personal.
 - Use “Hi”, instead of “Dear”.
 - Gender-neutral and professional.
 - “Folks” over “Ladies and Gentlemen” or “Guys and Girls”.



Flat!

- Open source organizations operate more flat.
- No need for “Dr.” or “Prof.”
- First/preferred-calling name is recommended!



But **no selective untitling!**

- If you choose to address with last name, **avoid** using “Ms.” or “Mr.” for a “Dr.” or “Prof.” as that is **untitling** and can be rude.
 - <https://womensagenda.com.au/latest/the-practice-of-untitling-stops-women-being-seen-recognised-for-the-work-they-do/>
- If you are referring to someone by “Dr. LastName,” do the same to all with MD/Ph.D./DSc/DBA/..., regardless of gender, race, type of their terminal/doctorate degree (DBA vs MD), etc.
- No “Thanks, Dr. Clifford, Dr. Solheim, Vanessa, Raja, Viktoria, and Mr. Chen”

Easier solution? Use first name (or preferred calling name) for all!



Help us maintain inclusiveness

- Don't misgender (i.e., assume a wrong gender.)
 - Happens a lot in emails/Slack/Discord.
 - Refer to folks using their correct gender.
 - If you are not sure, use “they” instead of wrong guesses or “he/she.”
- No “Raja says she will remind the admins.” No “Raja says he/she will remind the admins”
 - Instead, “Raja says they will remind the admins.”
 - Or “Raja will remind the admins. Raja told me that.”
- Even better, check Raja’s profile “Raja (he/him)” or previous interactions to find their gender.
- OK to ask Raja privately, “Hey Raja, what’s your pronoun? Sorry, I didn’t know.”
 - If they don’t reply, go with “they” or just “Raja.”



Mailing lists

- Post only to the relevant list/channel.
- Check the mail archives or channel logs first.
- No [URGENT]/[IMPORTANT] tags/flags in the email title/body.
- No unnecessary attachments.
- Avoid screenshots if a textual log is possible.
- No Cross Posting.
- Don't hijack threads.
- Don't post off-topic.



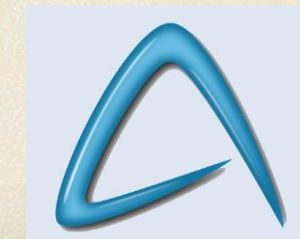
IRC/Slack/Discord Etiquettes

- Join the relevant channels.
- Be an observer first.
- Refer to others using their irc/slack nick to get attention.
 - But avoid misusing.
 - No @channel or @here. It “dings” all of us.
 - Don’t @ those who are offline or away. It “dings” them when they are probably busy... feeding their dog!
- Don't expect immediate replies; wait.
 - Mentors are not your 24/7 support center.
- Discuss in the channel. Minimize direct messages to mentors unless they suggest otherwise.
- ***Don't be funny unless everyone else is funny. :D***



Find a mentoring organization..

- Have a look at the [list](#) of past GSoC.
- New Organizations.
- Google as the mentoring organization.
- Introduce GSoC to an organization.



Find THE right project

- Go through the organizations' project ideas list.
 - Check for the previous years' GSoC ideas from the potential organizations until the accepted organizations are announced and their ideas lists are published.
 - You can apply up to 3 project ideas (from the same or from different organizations).
 - Quality over quantity.
- Only one will be eventually accepted.
- Make sure you like all the ideas you apply to.



Project Ideas List

- Project ideas by the organizations are intentionally left generic or “vague” enough.
 - Open for interpretation by the contributors.
 - Clarify with mentors on assumptions and your planned approach.

[4] Creating shareable "albums" from Niffler data sets

Mentors: Judy Gichoya (judywawira -at- emory.edu) and Pradeeban Kathiravelu (pradeeban.kathiravelu -at- emory.edu)

Overview: Niffler is a framework to retrieve DICOM images from PACS real-time as a DICOM stream as well as retrospectively. Images can be retrieved from a PACS via Niffler in real-time (via Niffler meta-extraction module) or on-demand (via Niffler cold-extraction module). However, these downloaded data sets remain in the local environments such as a research server or a cluster where Niffler is run from. To use this data, researchers must identify certain subsets of data. This can be achieved by querying the retrieved data. For instance, Niffler stores the metadata of the data retrieved in real-time in a Mongo database. By querying the metadata, subsets of images can be identified. However, currently Niffler does not possess the ability to create such "albums" from a set of DICOM images retrieved by Niffler, and share with other users.

Present Status of the work: Currently, Niffler does not have the ability to select subsets of images or create albums. We are sharing images through other orthogonal approaches (via rclone, for example).

Proposed Methodology: There are several approaches to implement such albums feature. One approach is to using [Kheops](#) to provide an interface to create and view the albums. [MEDiator](#) can be extended and incorporated to Niffler to create subsets and share the images via a unique URL as well.

Benefits: The proposed feature will make the images retrieved by Niffler accessible by more researchers for their experiments, by replacing the current manual efforts of data sharing. Moreover, Kheops natively integrate with OHIF Viewer. As such, images retrived by Niffler can be viewed through OHIF Viewer, by creating albums with Kheops.

Deliverables: An approach to creating shareable datasets from the DICOM images retrieved by Niffler. It could be adopting existing frameworks such as MEDiator and Kheops and scripts and integration code with those frameworks or an entirely new module to Niffler for this feature. However, students are encouraged to use Kheops or alternatives, rather than reinventing the wheel (unless there is a convincing reason).

Required Skills: Python and Java.

Code Challenge: A demonstration of potential integration of Niffler with such existing frameworks. The proposed frameworks are samples only. The students may choose their own.

Source Code: <https://github.com/Emory-HITI/Niffler/>

Slack room: gsoc-emory-bmi.slack.com niffler

Effort: Half-time



Get to know more..

about the projects

- Talk to the mentor(s)
 - Assigned by the organization for each project idea.
 - There could also be “unofficial mentors”
- Mailing lists and archives.
- Issue Tracker
 - Open issues or tickets
 - New features/Requests for Enhancements (RFE)
 - Bugs (easy/difficult and normal/critical)



What makes you *special*?

- Experience
- Your interests and motivation
 - Pick something you really enjoy doing.
- Opportunities
 - What makes you the right person?



Are you willing to contribute further?

- Willingness
 - To contribute to the community
 - Beyond the time frame of GSoC.
- We want committers, long-term collaborators, and future mentors!
 - Not just contributors for the summer!



Experience

- Language
 - Java, Python, Javascript, Go, C++, C, ..
 - Not much time to learn a new language (?)
- Prove It!
 - “Pull requests.”
 - Code challenges.
 - Assist other new potential contributors!!!
 - Project expertise
 - Bug reports and fixes.
 - Go through the archives, wikis, and web sites.



Opportunities..

- Project that matches your previous work experience.
- Choose the right project.
- Timezone Difference
 - Use it effectively
 - Early morning in Alaska. So Alaskans can start early. 😊



Communicate

- Communicate early – but meaningfully.
 - Not necessary to send a message just to say ‘hi’.
- Communicate often.
- Ask **meaningful** questions.
- Answer others' questions!
- Mentors are here to help!
 - (respect)



Avoid “lazy-sounding” questions

- I am new to GSoC. Please help me get started.
 - Follow the GSoC guidelines and organization's docs.
- Where to submit the proposal? When is deadline?
 - General GSoC details are in the GSoC guidelines. Use mentor's time and help more productively.
- I like to do project idea #4. Please help.
 - Unclear what help you expect.
- Can you explain the coding challenge?
 - Do you want us to paraphrase the whole coding challenge? What do you not understand?



Avoid vague/generic questions

- I cannot install the Niffler framework. Please help.
 - Where exactly did you get stuck? What is your operating system? Explain the execution environment.



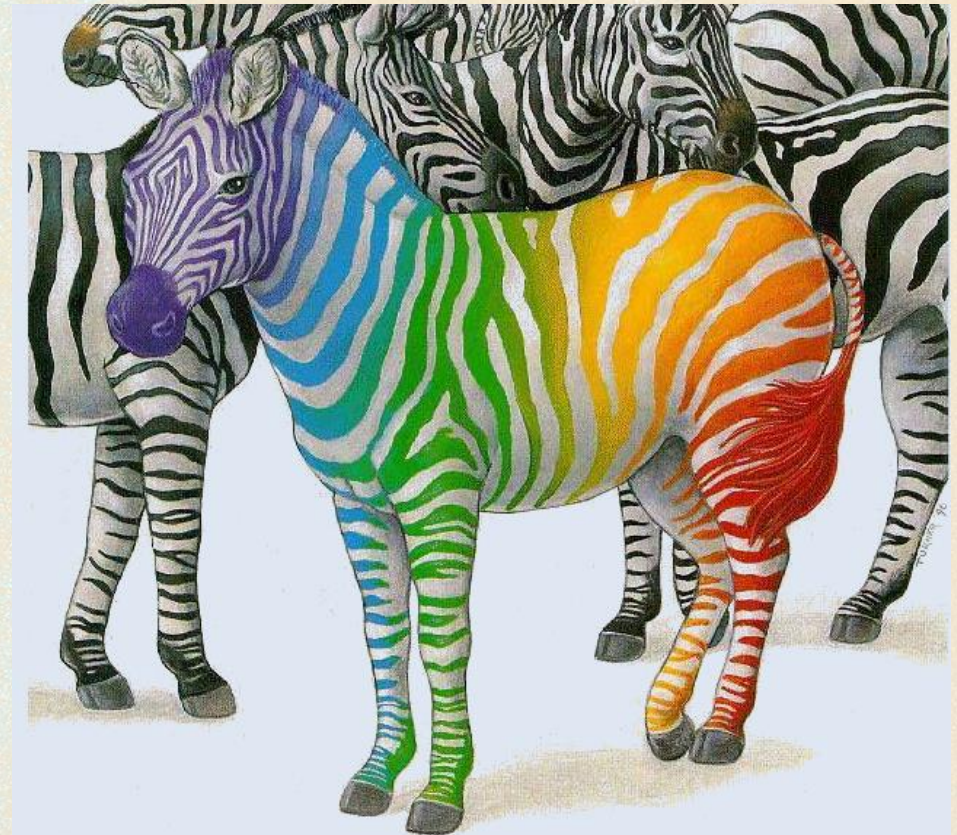
Ask clear, specific questions

- I followed the project idea and achieved the below as a demo. However, the last step is not clear. Does that mean I should clear the database first?
 - Shows effort and progress.
- I compiled Bindaas on Ubuntu 20.04 with Oracle JDK 1.8. However, it fails with authentication failure error message. The full logs are attached here as a text file. What went wrong?
 - Sufficient details included. Even works as a bug report.



How to stand out *(in a good way)*

- Be heard!
 - Quality over quantity.
- Be visible!
- Be responsive!



Apply

- Register as a contributor for GSoC.
- Apply on Google's system.
 - Can edit later, until *the last minute!*
- Get the mentors' opinions and improve.
 - Attend to them!!!
 - Some students ask for feedback but never attend to it once given.
 - Don't do that.



Project Proposal

How to “impress” the mentors/developers?

- Stick to the organization's template.
- **Don't go all creative on the template.**
 - We are not impressed by how you innovate on formatting.
 - It is annoying when you disregard the provided template.
- Abstract.
- Introduce yourself properly.
 - Focus on the relevant facts.
 - Why do you fit? Your skill sets.
 - List of the pull requests (if any) you have submitted.
 - Highlight if they are already merged!



Project Proposal

- Project Goals
 - Proves you got them correct.
- Deliverables
 - Code, Documentation, test cases, ..
- Description
 - Benefits to the organization and other projects.
 - Can also be given along with the timeline.



Project Proposal

- Timeline
 - Finer details.
 - Break up to periods of 3 - 4 days or a week.
 - Testing takes time.
 - Don't be over-optimistic.
 - Require 35 or 17.5 hours of work per week based on the project type (large vs medium size projects).
- Links
 - References and additional details.



(Sample) Application Template

- Name:
- Email:
- Project Title:
- Synopsis:
 - A short description of your project.
- Benefits to the organization/project
 - and/or other project(s):
- Deliverables:
 - Quantifiable results.



- For e.g., “*At the end of my project, Niffler Metadata Processing Pipeline will be 3 times faster.*”
 - (Don’t make superficial claims. Prove those).
- Project Details:
 - A more detailed description of your project:
- Project Schedule:
 - How long will the project take?
 - When can you begin work?
 - Do you know of any planned absences or other major conflicts
 - summer classes, vacations, etc.



- Bio:

- Who are you?
- What makes you the best person to work on this project?

- Additional Requirements:

- Pull Requests/ Bug Fixes / Specific requirements for the project.

- Further Related Information



After the submission..

- Don't go invisible!
 - Evaluation is still going on.. ;)
- You may be asked to give more details
 - Bug fixes / pull requests.
 - Demos and screenshots.
- You may even start coding on your project!
 - Especially if you didn't apply for multiple projects.
(Remember you can apply up to 3).
- Be motivated.



Didn't get selected?

- Not the end of the world. Don't get demotivated.
- If you have put in some genuine effort, you have already learned a lot.
- You can ask the mentors for feedback.
 - Sometimes, they will provide individual feedback.
 - “You were among our top 5 candidates. Unfortunately, Google provided us with only 4 slots this year, and sadly, we had to lose you.”
- You can apply next year or to another internship.
 - Or move on to other interesting adventures.



Got Selected? \yay/

- Don't Panic.
- You have one more month
 - to mingle with the developers and the code base.
- More one-to-one interaction with the mentor(s) once accepted!
 - Mentors will be more helpful and available to you.
 - (Because now it is individual mentoring, and mentors want you to succeed.)
- Keep in touch with the developers.



Community Bonding Period

- Learn more about the organization, the project, and the project idea.
 - Go through the code base
 - Documentation.
 - Coding styles and coding guidelines.
- Communicate often
- Understand the project idea more.
 - Come up with a design.
 - Start with simple fixes and incremental development.



Coding..

Easiest task of all.. ;)

- Commit often if given committership.
 - Send frequent pull requests (daily ?) otherwise.
 - Meaningful Commit messages.
- Get feedback from the mentor(s).
- Keep the community/mentor updated
 - Daily (?).
- Plan for the mid and final evaluations early with the mentor.



Conclude/Continue

- Final Submission – a link showing your GSoC work
 - If a new project/module can be a link to the source repository.
 - Or a wiki/blog/web page listing/pointing to your exact contributions.
- Don't miss any of the evaluation deadlines.
 - Submit those at the earliest possible date.
 - Both mentors and contributors must submit evaluations.
 - All 2 of the evaluations!
- Focus on becoming a committer in the organization
 - if not already given committership.
- Keep contributing.



More Paid Remote Open-Source Internships

- [Season of KDE \(SoK\)](#)
- [Outreachy](#)
- [Google Season of Docs \(GSoD\)](#) – for documentation.
- [Hyperledger Mentorship Program](#)
- [The X.Org Endless Vacation of Code \(EVoC\)](#)
- [More FOSS?](#)
- Annual?
- Stipend?
- Student?
- Country/Location?



Are you ready?

- Past successful proposals - Wikis, blogs, ..
- Proposal [Pradeeban]
 - [GSoC 2015 Emory BMI](#)
 - [GSoC 2014 Emory BMI](#)
 - [GSoC 2010 OMII-UK/OGSA-DAI](#)
 - [GSoC 2009 AbiWord](#)
- Ideas list:
 - [Django.](#)
 - [Apache Software Foundation](#)
 - More slots and more choices.
 - Join the projects' mailing lists and channels.
 - [Apache ShardingSphere](#), ...



For more Information ..

- Join the [GSoC mailing lists](#).
- Check the GSoC [official site](#) and [blog](#).
- Join your local GSoC Google Group
 - If there is none for your country or region (Alaska?), you can create one.
 - For e.g., The group for Sri Lankan contributors (now, mostly idling):
<http://groups.google.com/group/gsoc-srilanka>

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Questions?
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