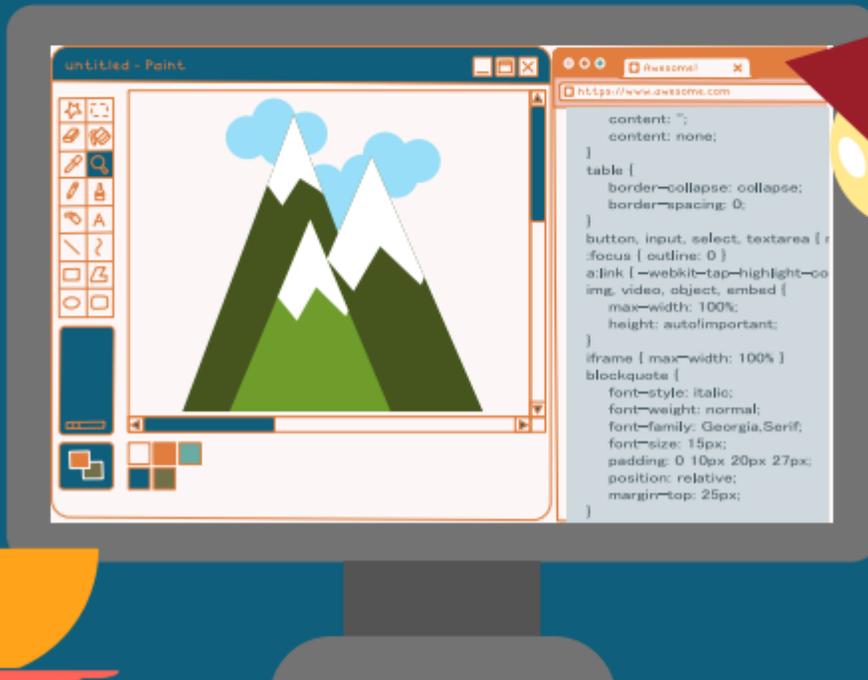




LANTERN
INSTITUTE

LANTERN INSTITUTE'S

PROGRAMMING MENTORSHIP



LANTERN INSTITUTE IS PROUD TO BE BRINGING A NEW MENTORSHIP PROGRAM TO HIGH SCHOOL STUDENTS!

OVERVIEW OF LAMP

Lantern's programming Mentorship Program (LAMP) is designed to be a long-term program wherein students receive instruction and close guidance from a mentor to aid in their development and growth with respect to subjects in software development.

We offer an online interactive program that helps students dive right into the world of programming. Each class covers specific key topics, exercises, and challenges that assist students on their way to learned developers. The program provides the opportunity to set foot into the world of STEM with hands-on training.

The multistage design of LAMP creates 3 semi-self-contained phases that provide participants with showcase pieces after each milestone that show their progress and achievement. This design also ensure that no student is left behind early on and allows students to participate in the program in a modular form.

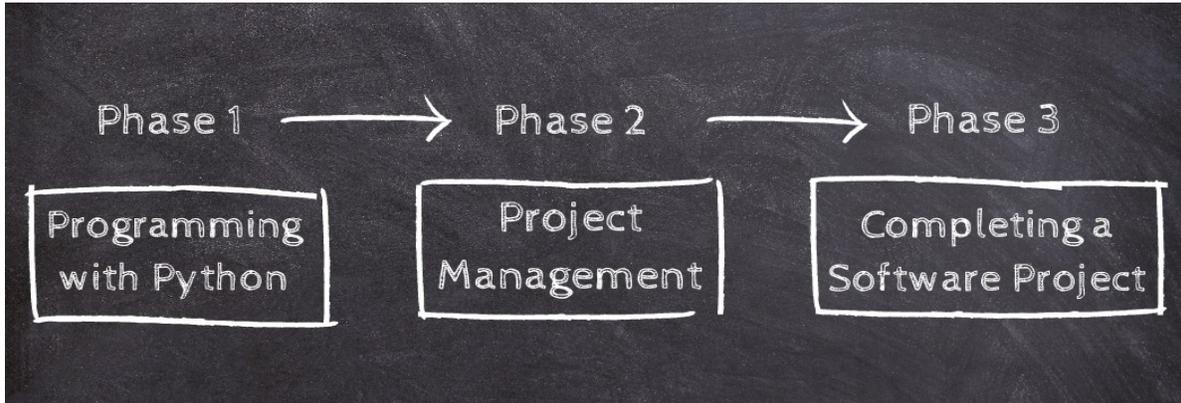
Whereas other entry-level programming courses are typically limited to only teaching basic principles over a couple of weeks, LAMP focuses on the complete picture with a cumulative project and equips students with the tools they need to continue learning well after they complete the program.



COURSE CONTENT & PROGRAM FORMAT

The program commences at a starter level and progresses through more advanced topics while retaining a focused goal of completing a working software project by the last class.

The program is divided into 3 phases:



In the first phase, students will gain working knowledge of basic and intermediate topics of programming in Python. It will start from "what is a program" and work up to object-oriented programming and basic GUIs, making it an ideal starting point for any beginner level. By the end of the first phase, students will be tasked with completing a small mini project of their choosing that demonstrates their working knowledge of the topics.

For the second phase, the main focus of the program will shift away from coding and towards project planning and management. Students will learn to use some practical tools for effectively planning out projects and remaining on task throughout the development process. Throughout the phase students will apply the topics and techniques covered to the planning of the mentorship project to get practice and to ensure they are on track for completing the project in the phase 3 of the mentorship.

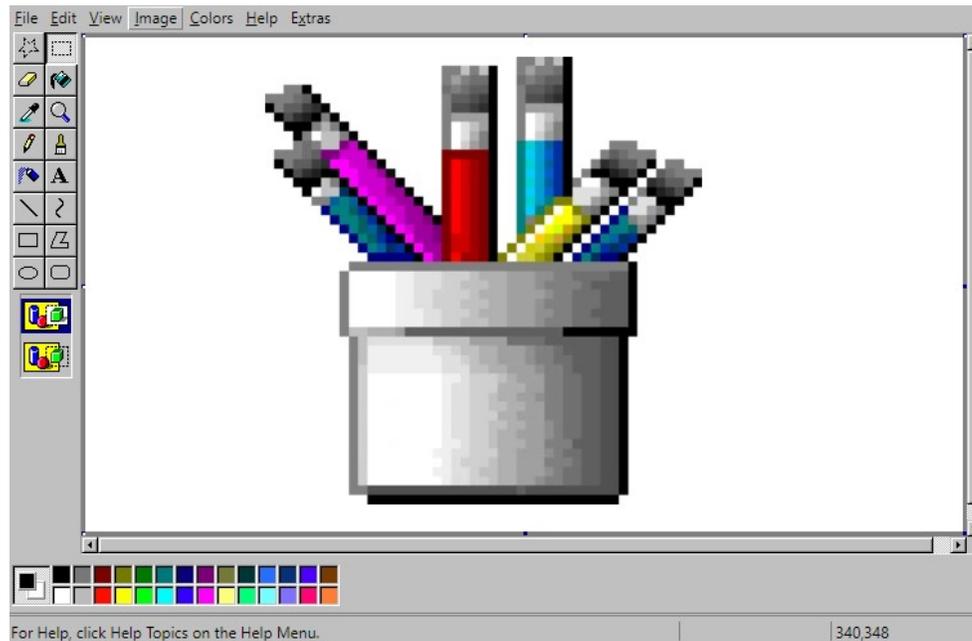
The third phase of the program is where students will get to combine their project plan and their newfound programming skills to complete the project. This phase will include supplementary teaching on more specialized topics and, time permitting, extra topics that students are interested in learning about. By the end of this phase, and the program, student will have a fully completed project plan and working software that they can utilize and showcase in a portfolio.

Some key topics that will be covered throughout the program include:

- The system development life cycle
- Modeling languages & system design
- Programming concepts & practices
- Principles of good design
- Project management & version control
- Leveraging freely available resources
- Applying textbook math & stats to real projects and problems



THE PROJECT



The outlined project will have students create their own graphics editor program, akin to the classic Microsoft Paint Editor (pictured above). This style of project incorporates a multitude of features that will give students a broad exposure and given them a better sense of what interests them most as they progress on past the program. Some of the outlined features to be included are:

- A graphical user interfaces
- File input & output
- User inputs
- Image manipulation formulas and techniques
- Image editing features

The specifics of how and what features students implement in the program is up to them to decide during the planning of the project in phase 2.

Students who have alternate interests or are more experienced can also propose alternate project ideas they wish to complete instead, which will be approved if the material is deemed to be at an appropriate level.



WHO IS LAMP FOR & WHAT IS REQUIRED TO PARTICIPATE?

Ideal for those interested in tech, engineering, computer science, and more, this is designated for a wide range of high school students (Gr. 9-12) with interests in computer- driven, and computer-aided, careers and hobbies.

Some level of computer literacy is expected (familiarity with computers) but no prior programming knowledge is required to participate. Those with limited prior experience will also find this program beneficial for its range of topics and greater overview of the software development process.

Students will be required to have access to a personal computer and a reliable internet connection.

PROGRAM DELIVERY

Each of the 3 stages of the program will run 1-2 months (dates pending). Each stage will consist of 8 mentoring session that will be 2 hours long (i.e. 24 session for the full program).

The mentoring sessions will guide the students through difficult concepts and provide them with resources to review and weekly tasks to complete.

Each stage will see students reach a milestone in the mentorship and provide them with a completed part of the project to showcase their progress.

