



## Python

Sponsored by: *Michigan Software Labs*

### **Contest Overview and Components**

The Python contest gives teams the chance to demonstrate their programming skills to fill a company's needs using unique code, rather than Commercial off the shelf (COTS) solutions, giving a company a strategic advantage.

Teams will be given a problem statement at the beginning of the contest time that will explain a company's unique requirements. Time will be allowed to read the problem statement and ask any questions in a common session. Once the question and answer time has closed, no further questions will be answered. At the end of the contest period, each team will be asked to submit a copy of their solution (all source code/resources and compiled application) for judging.

*Contest Note:* students must be capable of saving their submissions on a USB flash drive from their personal computers.

### **Team Composition**

Individuals or teams of 2 students can register for this competition.

### **Skills**

Python programming, Object-Oriented programming, module creation and use, refactoring, ability to properly document code with docstrings, JSON, REST API familiarity.

#### General Skills

- Exception handling
- Code Documentation
- Classes and Object-Oriented design principles
- Events and Handlers
- Data import, export, access, binding, connections, and manipulations
- XML / JSON
- Web knowledge/REST familiarity

- Output (Printing, PDF, Reports, or HTML formatted output)
- Encryption, decryption
- Three tier approach / MVC (data/model, interface/view, and business/controller)
- Database connections / create, read, update, and delete

## Scoring

Your submission must compile in order to be evaluated. A scoring rubric will be distributed with the problem statement at the beginning of the contest time. General evaluation will be:

- Completion of requirements 80%
- Code Documentation 10%
- Application Documentation 10%

In the event of a tie, Code Documentation and the use of Object-Oriented Approach will distinguish differences.

## Schedule

See contest schedule for contest time and place. The time will include contest overview, contest work, and turn in.

Check in will begin 20 minutes before the contest begins.

## Resources

- Each team must have at least 1 computer to complete your project
- A general Text Editor as well as PyCharm can be used.
- All projects can contain additional packages from pip
- All projects must use Python 3.10 or higher
- HTML code can be developed using HTML5
- Internet access is allowed for research, although you must write your own code.