Introduction to Python

while (!(succeed = try()));

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About Me

- **B.Tech in Electronics and Communication Engineering**, NIT Arunachal Pradesh, 2014-2018
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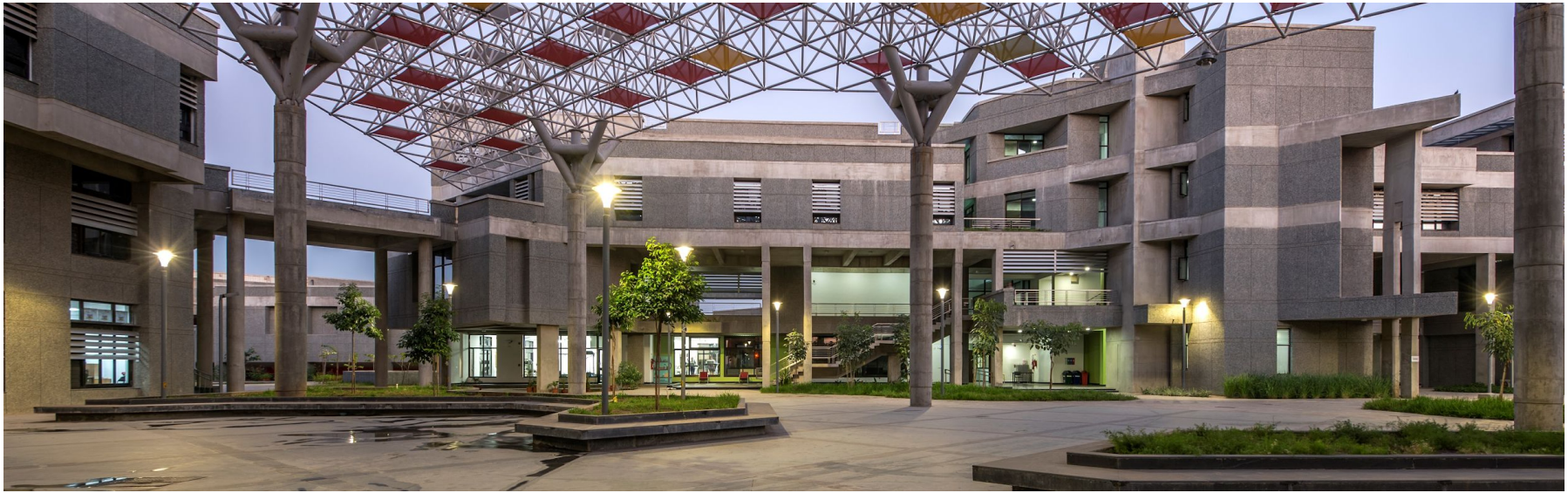

http://events.iitgn.ac.in/2020/NCONC-2020/homepage.html

Goal

nanoDC should speak in one language!

Basic Needs of Life

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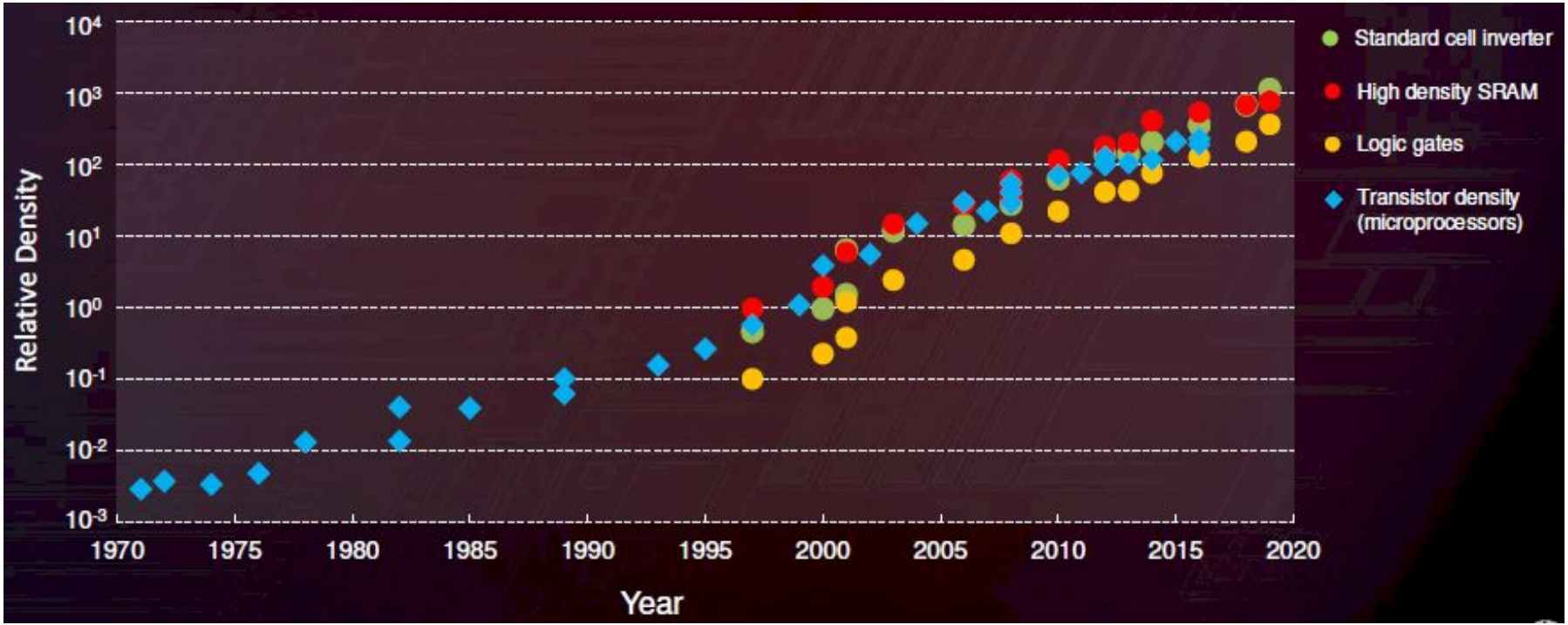
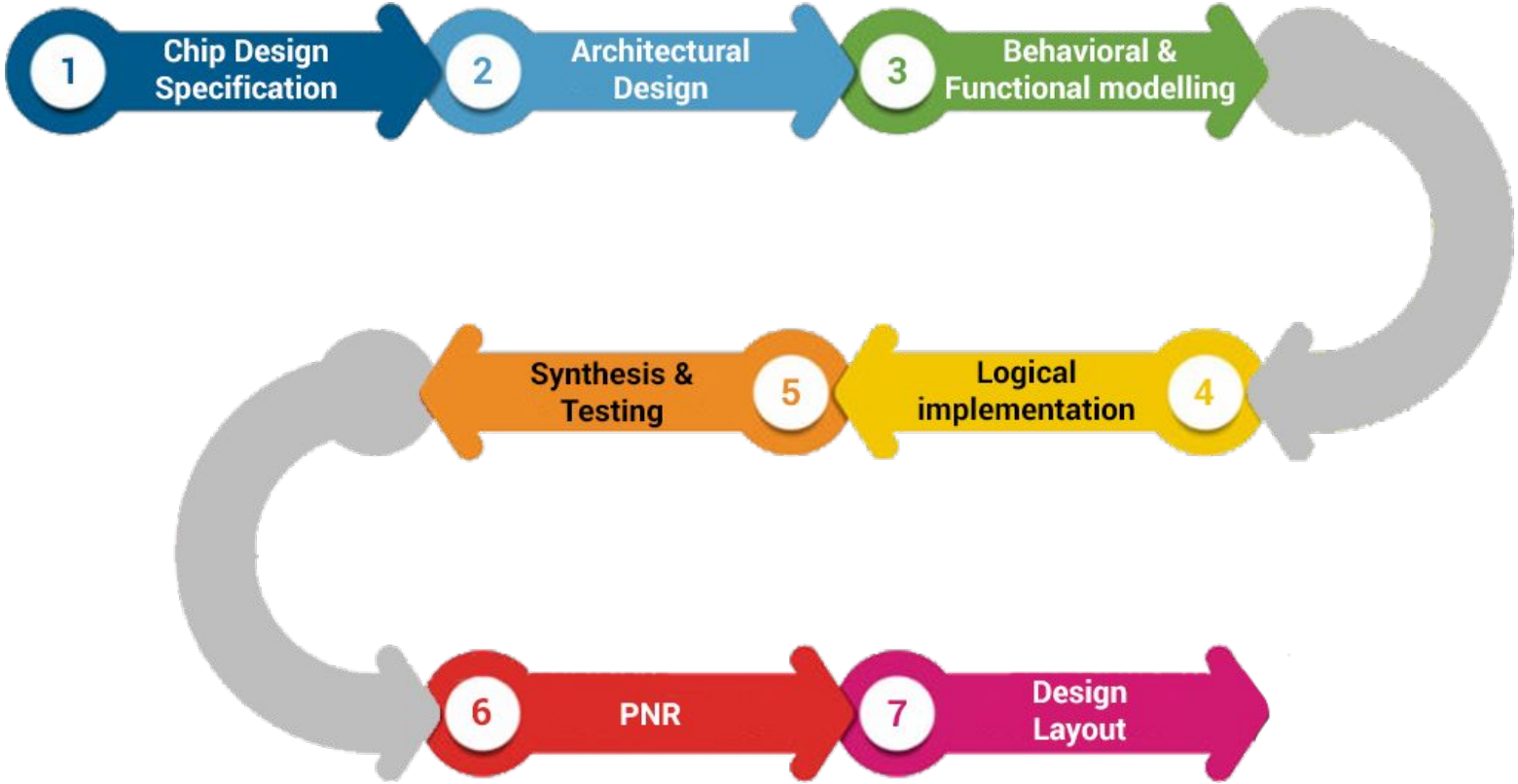
Moore's Law



Source: TSMC

RTL to GDSII



Source: https://www.einfochips.com/blog/asic-design-flow-in-vlsi-engineering-services-a-quick-guide/

Python

Source:https://data-flair.training/blogs/features-of-python/

What you can do with python?

Source: https://data-flair.training/blogs/why-learn-python/

Programmers are more important than programs

import this

```
The Zen of Python, by Tim Peters
Beautiful is better than ugly.
Explicit is better than implicit.
Simple is better than complex.
Complex is better than complicated.
Flat is better than nested.
Sparse is better than dense.
Readability counts.
Special cases aren't special enough to break the rules.
Although practicality beats purity.
Errors should never pass silently.
Unless explicitly silenced.
In the face of ambiguity, refuse the temptation to guess.
There should be one-- and preferably only one --obvious way to do it.
Although that way may not be obvious at first unless you're Dutch.
Now is better than never.
Although never is often better than *right* now.
If the implementation is hard to explain, it's a bad idea.
If the implementation is easy to explain, it may be a good idea.
Namespaces are one honking great idea -- let's do more of those!
```

Where to practice?

https://www.hackerrank.com/dashboard

Reference

- https://github.com/rajathkmp/Python-Lectures
- https://github.com/jupyter/jupyter/wiki/A-gallery-of-interesting-Jupyter-Notebooks
- https://github.com/zhiyzuo/python-tutorial
- https://gist.github.com/kenjyco/69eeb503125035f21a9d
- https://github.com/mGalarnyk/Python_Tutorials
- https://github.com/jerry-git/learn-python3
- **https://www.tutorialspoint.com/python3/index.htm**

Day 1

- **Motivation**
- **Installing Jupyter Lab**
- Some Best Coding Practice
- Python Basics
  - Numbers
  - Strings
  - Conditionals

Day 2

- Python Basics
  - **Numbers**
  - **Strings**
  - **Conditionals**
  - **Loops**
  - **Lists**

Day 3

- Python Basics
  - **Numbers**
  - **Strings**
  - **Conditionals**
  - **Loops**
  - **Lists**
  - **Dictionaries**
  - **Functions**
  - **Modules**

Day 4

- Python Basics
  - **Numbers**
  - **Strings**
  - **Conditionals**
  - **Loops**
  - **Lists**
  - **Dictionaries**
  - **Functions**
  - **Modules**
  - **Exception Handling**
  - **A simple Project**

Day 5

- Python Basics
  - **Numbers**
  - **Strings**
  - **Conditionals**
  - **Loops**
  - **Lists**
  - **Dictionaries**
  - **Functions**
  - **Modules**
  - **Exception Handling**
  - **A simple Project**
  - **Standard Libraries**
    - **Datetime, logging, random, re**

Day 6

- Python Basics
  - **Numbers**
  - **Strings**
  - **Conditionals**
  - **Loops**
  - **Lists**
  - **Dictionaries**
  - **Functions**
  - **Modules**
  - **Exception Handling**
  - **A simple Project**
  - **Standard Libraries**
    - **Datetime, logging, random, re**
  - **Some examples**

Day 7

- Python Basics
- **Python Advanced**
  - **Numpy**

Day 8

- Python Basics
- **Python Advanced**
  - **Numpy**
- **Errors**

Day 9

- Python Basics
- Python Advanced
  - Numpy
- Errors
- **Python Tips and Tricks**

Day 10

- Python Basics
- Python Advanced
  - Numpy
- Errors
- **Python Tips and Tricks**

Day 11

- Python Basics
- Python Advanced
  - Numpy
- Errors
- **Python Tips and Tricks**

Day 12

- Python Basics
- Python Advanced
  - Numpy
  - Errors
  - Python Tips and Tricks
  - **Pandas**

Day 13

- Python Basics
- Python Advanced
  - Numpy
  - Errors
  - Python Tips and Tricks
  - **Pandas**
  - **Matplotlib**

Day 14

- Python Basics
- Python Advanced
  - Numpy
  - Errors
  - Python Tips and Tricks
  - Pandas
  - **Matplotlib**

Day 15

- Python Basics
- Python Advanced
  - Numpy
  - Errors
  - Python Tips and Tricks
  - Pandas
  - **Matplotlib**
    - **Plots**

Day 16

- Python Basics
- Python Advanced
  - Numpy
  - Errors
  - Python Tips and Tricks
  - Pandas
  - Matplotlib
    - Plots
    - **Animations**

Day 17

- Python Basics
- Python Advanced
  - Numpy
  - Errors
  - Python Tips and Tricks
  - Pandas
  - Matplotlib
    - Plots
    - Animations
  - **Object Oriented Programming**

Assignments and Projects Given

Solve Problems in Hackerrank.

List of Assignment and Projects Given:

- Alphanumeric Sorting
- Camscanner in Python
- Write code to calculate sine, cosine, and tangent of an angle using functions.
- Website using Jupyter Lab and Python
- Iron Man Jarvis AI Desktop Voice Assistant
- Implement Linear Search Binary Search, Insertion Sort, Bubble Sort, Selection Sort, Counting Sort in Python.
- 30 mins Demo

Topic to be covered

- Regular expression
- OOPS
- Web Development
- GPU Processing , Parallel Processing, Multithreading,