

Sandhi

Open Source Visual Programming Software

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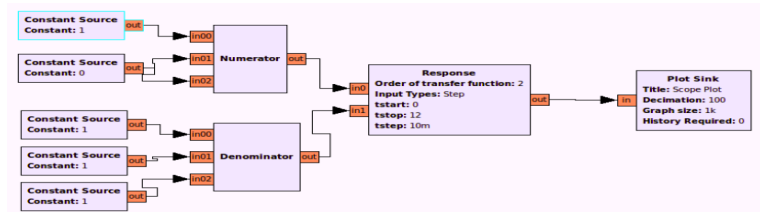
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Introduction

- Sandhi is a visual programming editor based on GNU Radio
- Basic data structure in sandhi is the flowgraph
- It has been named Sandhi as it means connecting and conveys our idea of connecting various blocks to come up with a robust visual program
- Sandhi is aimed to become a visual programming tool for replacing LabVIEW

Flowgraph

- Flowgraph represents the connections of the blocks through which a continuous stream of samples flows
- The concept of a flowgraph is an acyclic directional graph with one or more source blocks (to insert samples into the flowgraph), one or more sink blocks (to terminate or export samples from the flowgraph), and any functional blocks in between.



Motivation to develop Sandhi

- Lack of proper open source alternative to LabVIEW.
- Expensive proprietary software.
- Being FOSS, it gives you freedom to modify, share and sell your application without any permission.

Development of Sandhi

- GNU Radio
- sciscipy
- GRAS

- GNU Radio is a free and open-source software development toolkit that provides signal processing blocks to implement software radios.
- Supposed to be used by the Electrical Engineering community for the purpose of digital signal processing
- It has a rich module of implemented device drivers and thereby supports a range of devices

Why GNU Radio?

- GNURadio is a very promising visual programming tool as:
 - it make very easy for the developer to abstract his code
 - provides a very easy to use framework to the developer
 - it is open source

- Sciscipy is an Application Programming Interface
- Aimed for Inter Process Communication with scilab when in workspace of Python programming language

- GRAS stands for GNU Radio Advanced Scheduler
- It was impossible to implement the feedback with GNU Radio, which uses stock application scheduler **Note:** Application Scheduler is responsible for threading, controlling the data flow and managing the use of the computer resources like processor time to various processes.

GNU Radio to Sandhi