A Study on Turtle Library

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Abstract

TURTLE is a pre-installed library in the python programming. It enables the user to create the pictures, shapes and windows by providing virtual canvas. The onscreen pen tool which is used for drawing is known as turtle hence the library is also named as Turtle.

Keywords: IDLE: Integrated Development and Learning Environment**,** Turtle Screen**,** PyGame**,** Auto motion**,** SKK (Simple Kanji Conversion)**,** kwlist

1. Introduction

Python programming makes the programming platform much easier with its wide range of libraries and modules. Turtle library is also one of them. This library provides the user friendly interface for the programmer to design the shapes, pictures….etc.

Turtle graphics is a remarkable way to introduce the programming for the beginners and the kids. All the modules developed in the python turtle are produced in virtual canvas.A onscreen pen tool which is known as the turtle is used to draw the design or the pattern on the canvas.[5]

We can give command to the python turtle pen tool to move forward, backward, right, left, up, and down to draw the pattern along its motion on the canvas.

The above figure 1 show a design which is developed by using the python turtle library.

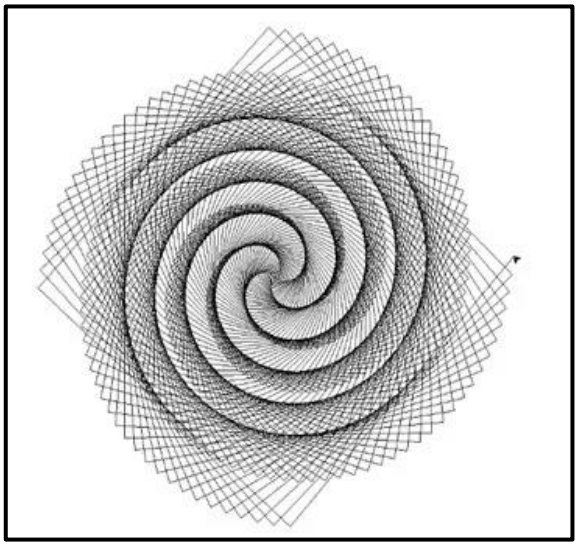

Figure 1: A design developed by using turtle library (courtesy: ref 1)

A python turtle module can be implemented in both the object oriented and the procedure oriented ways. This module can be used in various sectors like:[6]

- **Game development :**
  We can develop the modules of games using the python turtle.
- **Graphic Design**:
  Beautiful graphical wonders can be created by using the turtle.
- **Logo Design:**
  Many marketing posters, logos can be made by using this module.
- **Medical Diagnostics:**
  We can generate the reports of many diagnostics using this module.

Applications

2.Game Development:

Turtle graphics makes the programming fun and interacting way. Turtle library which has a wide range of functions will make the game development much easier than java.[8]

- Turtle helps in designing the UI of the games very much easier than java.[9]
- Compact 2-D games can be designed entirely using the turtle only.

  Ex: pace man, snake. . Etc

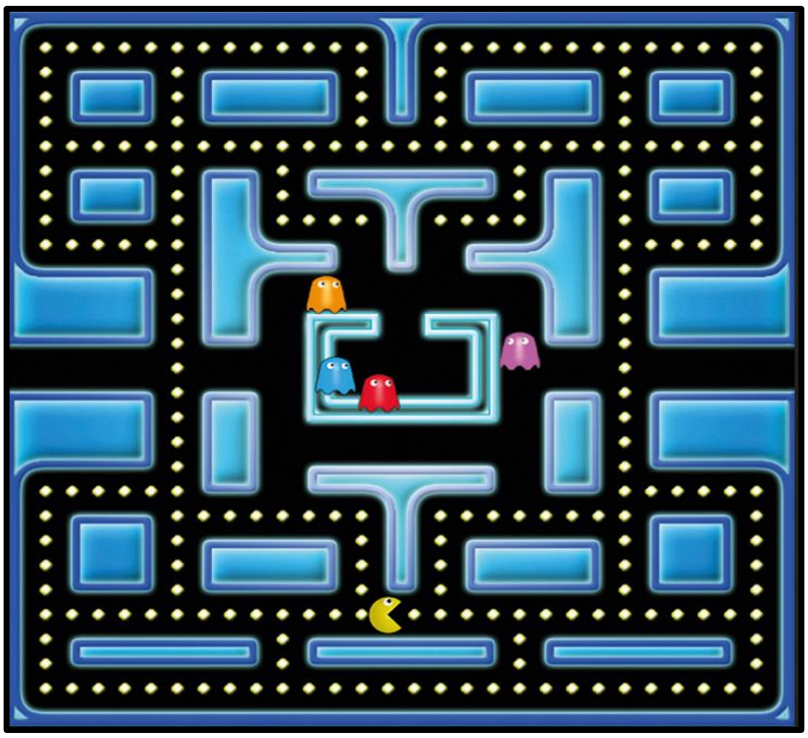

Figure 2: Pace man (courtesy:" ref: 3)

Figure 2 shows a simple game developed by using the python turtle.

3. Graphic Design:

Many graphical wonders can be created by using the turtle library. We can create the desired graphic design by using the turtle pen tool. We can move the turtle as per our design request and draw along its motion by giving its respective commands. Here are the some basic commands used by the turtle.[10]

- t.rt()
- t.lt()
- t.fd()
- t.bk

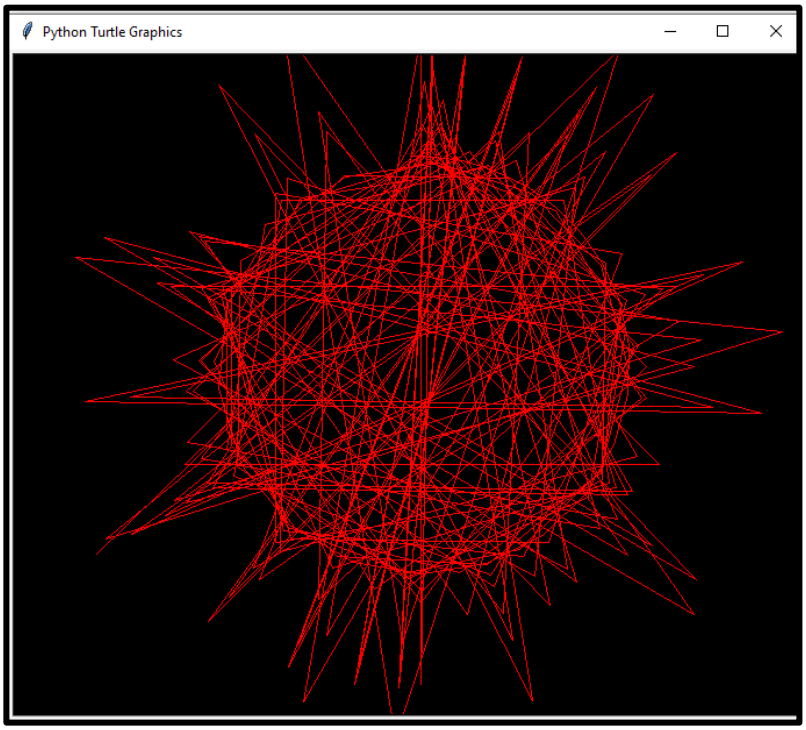

Figure 3: (courtesy: “ref 10”)

Here figure 3 shows some graphic designs generated by using the python turtle module:

4. Logo Design:

Python turtle makes the sector of logo design very much easier than the other programming languages. It’s because of the wide collection of the libraries.The syntax of the turtle package is very comprehensible than the awt and swing packages in java.[15]

The pen tools in turtle make our work faster with their respective commands. This module makes the marketing logos, app logos, game logos and many more.

Here are the some basic commands used in turtle for logo design:

- pen size()
- filling()
- colour()
- shape()
- pencolor()

- fillcolor()

- This turtle is mainly used for designing the name arts, advertisements, posters … etc.[16]
- Here figure 4 shows a logo generated using the python turtle:

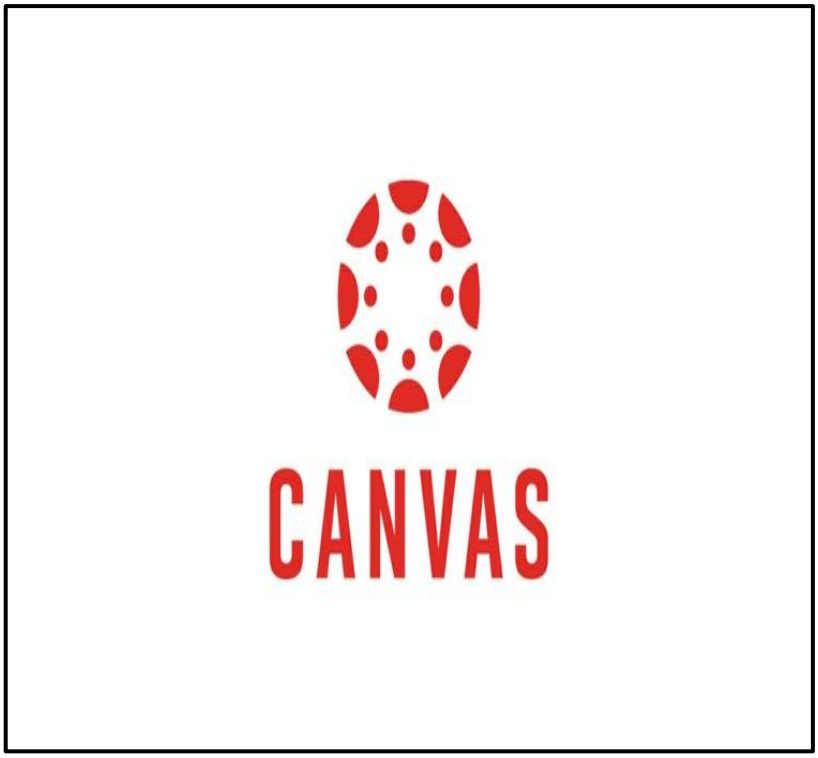

Figure 4: (courtesy: ref 4)

5. Medical Diagnostics

The treatment of the patients depends on the medical diagnostic reports. So there is need of proper medical reports. These reports include MRI scans, CT scans … etc [12]

Python turtle provides an ease to work with all these scans easily and helps the doctors to identify the damaged organ or the affected organ.

Figure 5 shows the sample of a medical diagnostic report which is generated by using the python turtle.[13]

- DJANGO module is used along with the TURTLE module to develop the more accurate diagnostics.

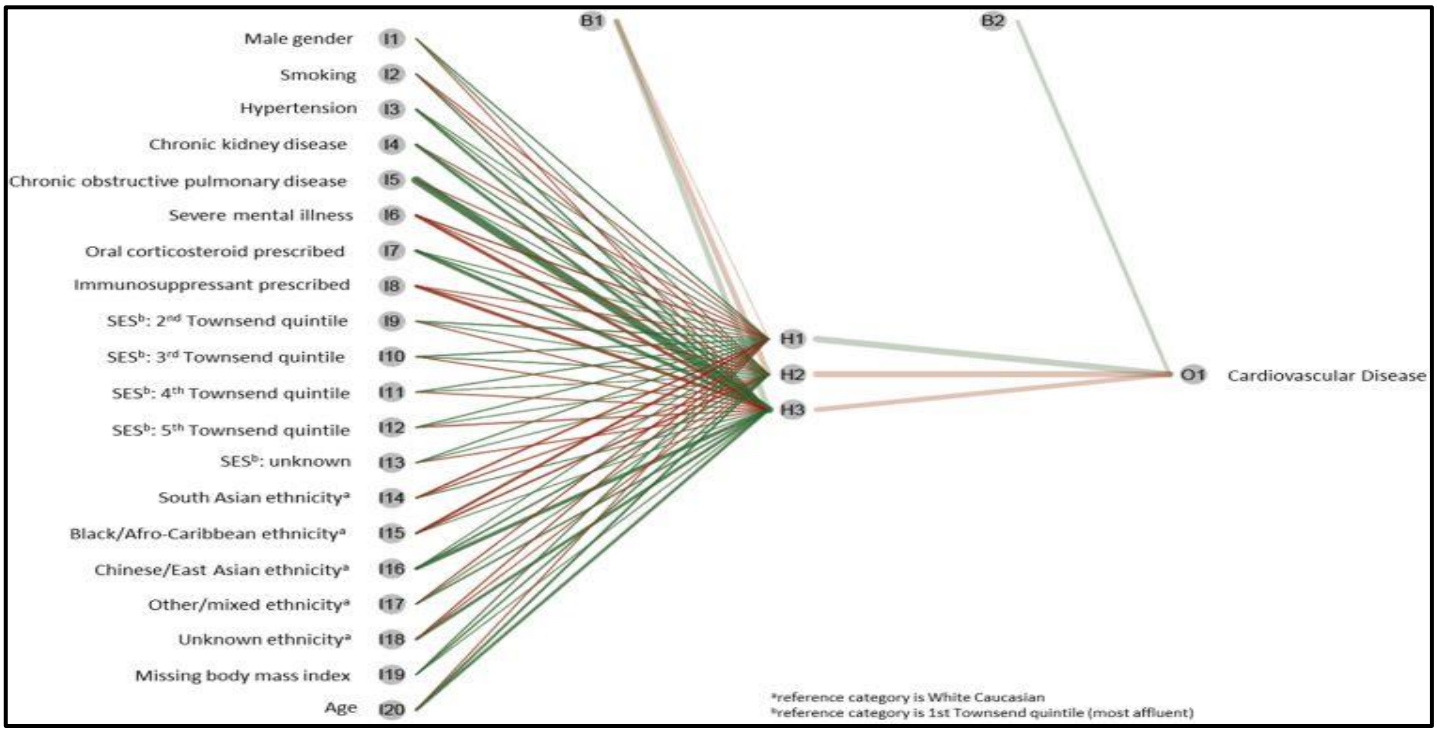

Figure 5 : Full body diagnostics of a person (courtesy : ref 3)

6. Conclusion

Using the basic statements of the turtle any person can use the canvas to draw whatever they want just by giving the required parameters. We can create many visual wonders if turtle is used in organized manner. Turtle is a great idea to generate the interest of programming in kids.

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