What is it like to write a program?

**Step 1:** First we design the algorithm (step by stem method to solve a particular problem)

**Step 2:** Then we translate the algorithm into a program using some programming language. This example uses Python.

Here are some simple Python programs.

c. Some simple Python programs.

This program

```python
name=input("What is your name? ")
print("hello", name)
```

produces this output:

```python
>>> What is your name? Jerry
hello Jerry
```
Looping in Python:

```python
for i in range(5):
    print("Hello")
```

prints:

```python
>>> Hello
Hello
Hello
Hello
Hello
>>> |
```

Let’s do some simple graphics with Python! It’s called “Turtle Graphics” because we will issue commands to a “turtle”.

Here are some turtle commands:

- `penup()`
- `pendown()`

`forward(n)` - move n positions in the direction the turtle is pointing

`back(n)` - move n positions in the direction opposite the one that the turtle is pointing

`right(n)` – rotate the turtle n degrees in a clockwise direction

`left(n)` – rotate the turtle n degrees in a counter-clockwise direction
**Example:**

What will this do?

```python
for i in range(10):
    pendown()
    forward(15)
    penup()
    forward(15)
```

Think first, then run it to check your answer.

**Challenges:**

1. Write a Python program to draw a square with each side of length 100.

2. Write a Python program to draw a triangle with each side of length 100. It should look like this:
3. Write a Python program to draw a triangle with each side of length 100. It should look like this:

![Triangle](image)

4. Write a Python program to draw a hexagon with each side of length 100. It should look like this:

![Hexagon](image)

5. Write a Python program to draw a circle. It should look like this:

![Circle](image)
6. Write a Python program to draw a 5 pointed star. It should look like this:

```
   /
  /\/
 /  \/
  \
```

7. What do you think that this one does? How/why?

```python
for i in range(100):
    forward(10+5*i)
    right(120)
```