Solution:

When we run the main python file gravityassistintcode.py locally:

Part I:

In the list of inputs provided by the code challenge, if it gets opcode as ‘1’ , in the 0 position it searches and adds the values in respective positions 1 and 2 and stores in position 3rd value.

If it gets 2 as opcode in position 0, it searches and multiplies the values in respective positions 1 and 2 and stores the in position 3rd value.

We need to change the input provided before running the prgram where we need to replace the positions 1 and 2 in the list as 12 and 2 . We achieved this by using variables to replace.

Some examples:

1,0,0,0,99 becomes 2,0,0,0,99 (1 + 1 = 2).

2,3,0,3,99 becomes 2,3,0,6,99 (3 \* 2 = 6).

2,4,4,5,99,0 becomes 2,4,4,5,99,9801 (99 \* 99 = 9801).

1,1,1,4,99,5,6,0,99 becomes 30,1,1,4,2,5,6,0,99.

By iterating through all the values in the input.txt , the final answer in the position 0 comes as 3895705.

Part II:

Now here we need to find out the input in Position 1 and 2 from a particular output provided by the code challenge which is 19690720. The inputs need to be between 0 and 99 included. Do not use previous code memory.

Using nested for loops and 2 variables are found using the output what will be the values in Position 1 and Position 2.

The values came out to be 64 and 17.

There after we need to do a math of 100 \* 64+17 . The result becomes 6417.

Screenshots of the results:

A computer screen with white text

Description automatically generated

Running the Unit test file locally:

A screenshot of a computer

Description automatically generated

Running the python code using GITHUB actions along with unit test:

A screenshot of a computer

Description automatically generated