

Homework 3

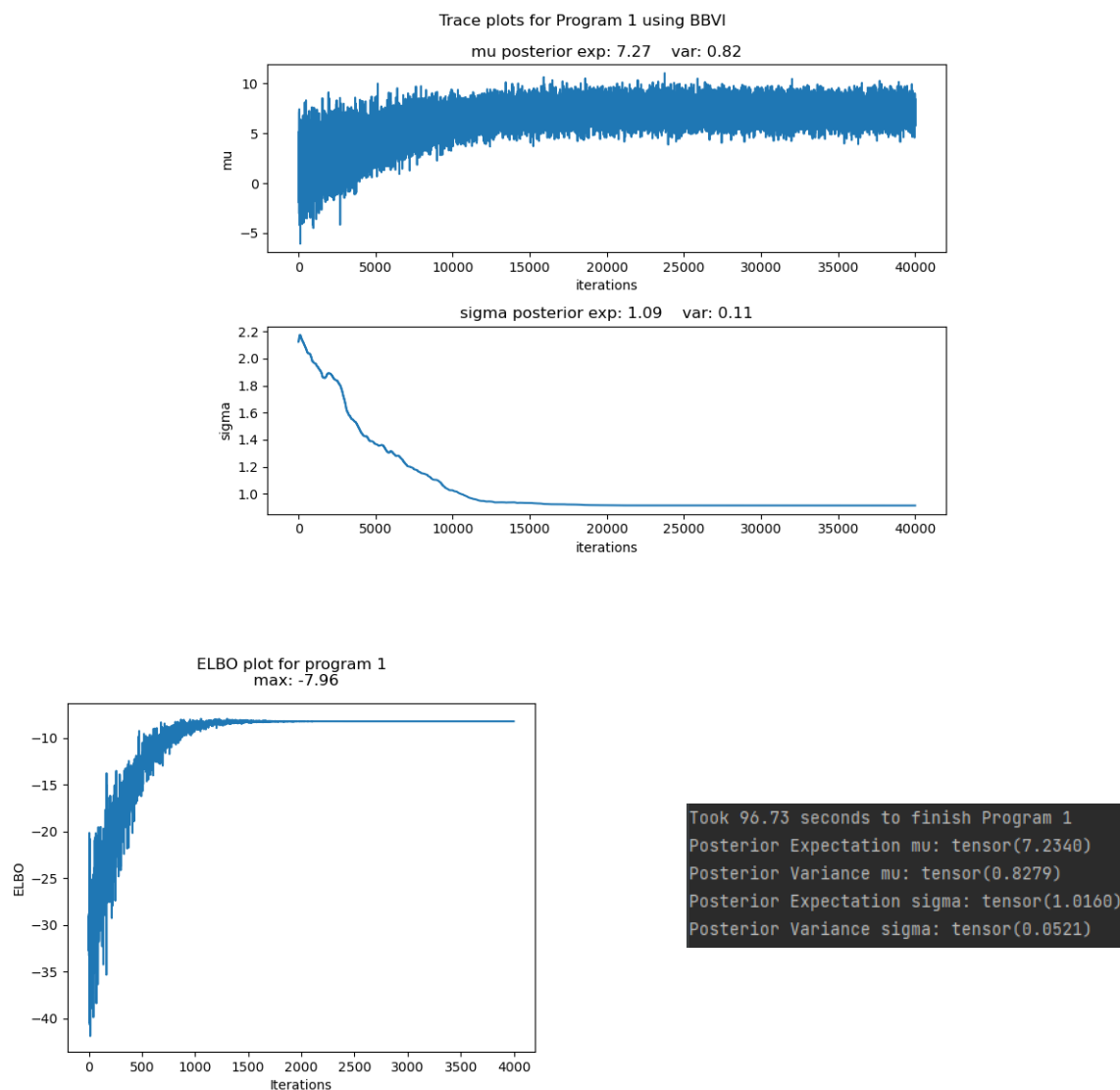
Kevin Yang - 50244152

November 4, 2021

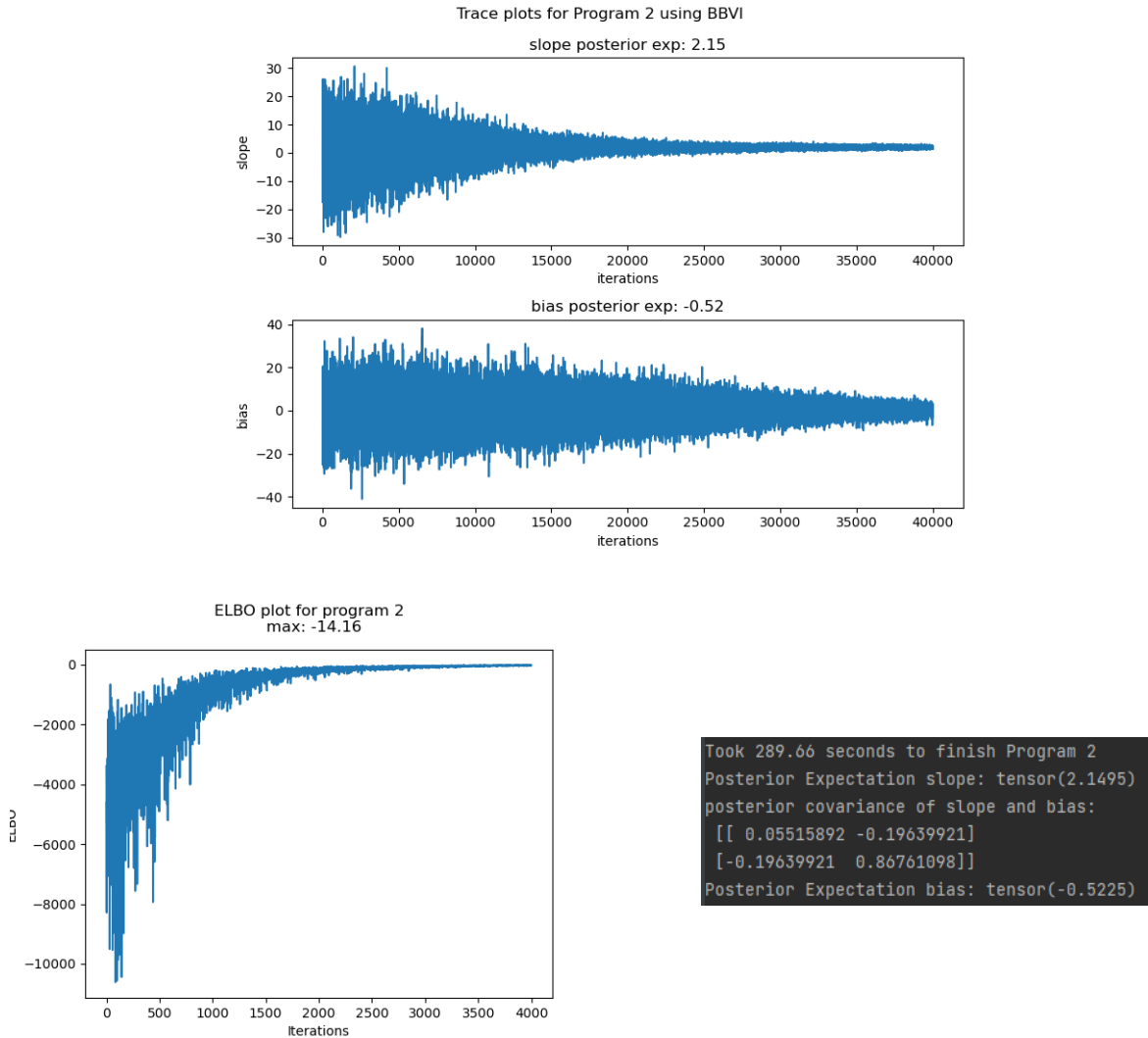
Link to repo:

<https://github.com/keviny2/CPSC532W-Assignments/tree/main/FOPPL>

1 Program 1



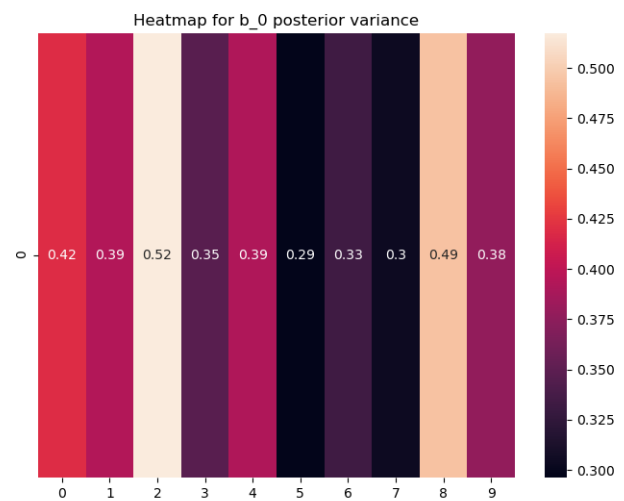
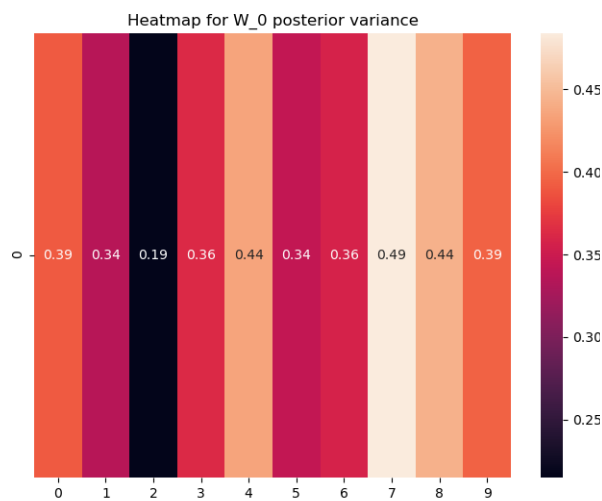
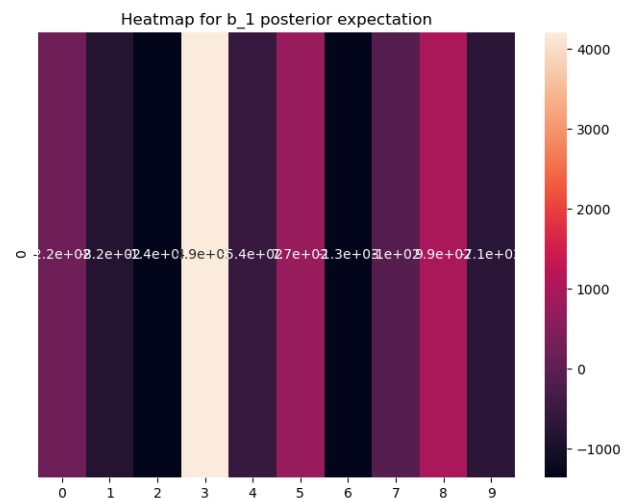
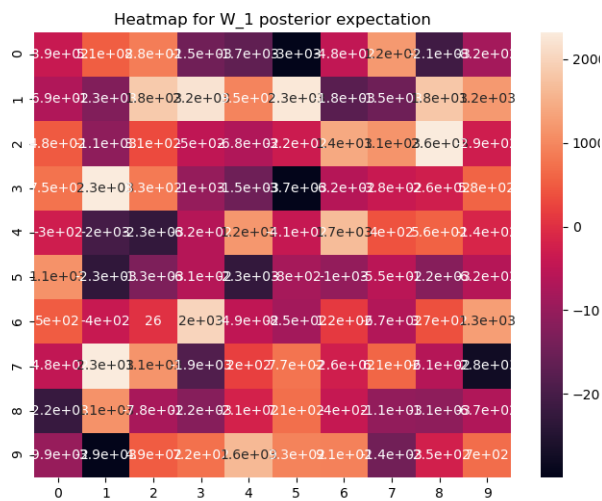
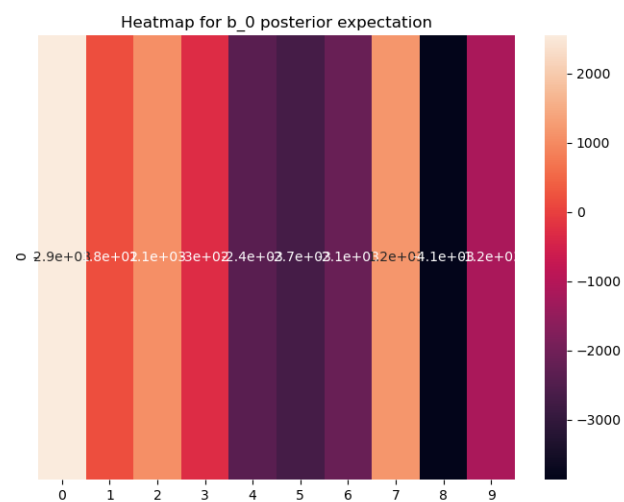
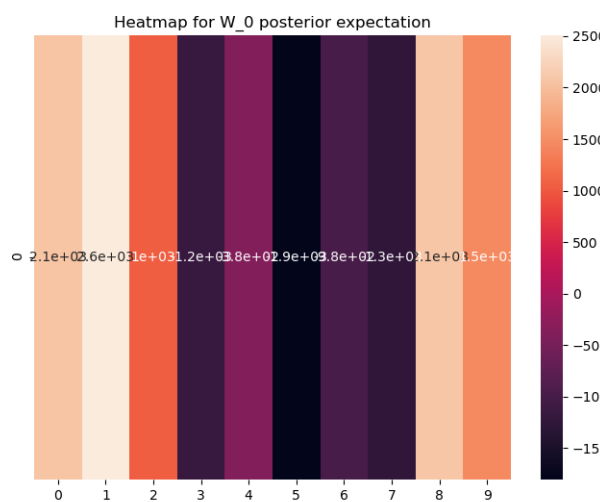
2 Program 2

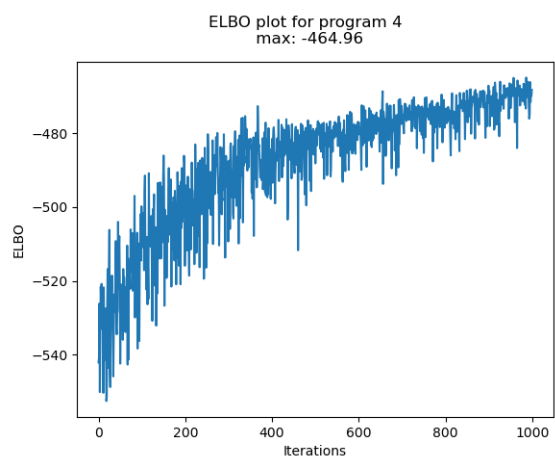
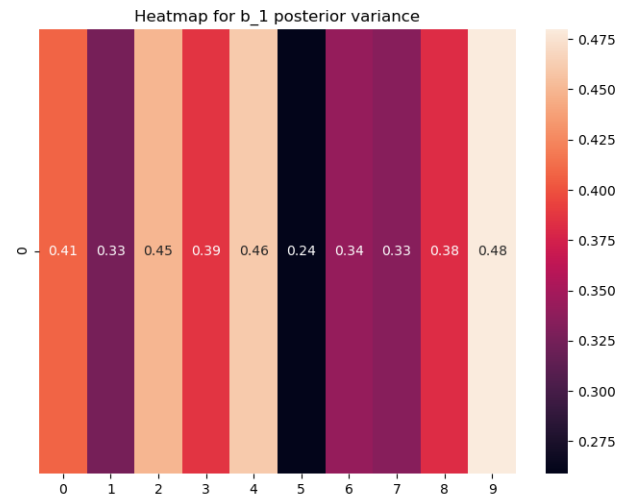
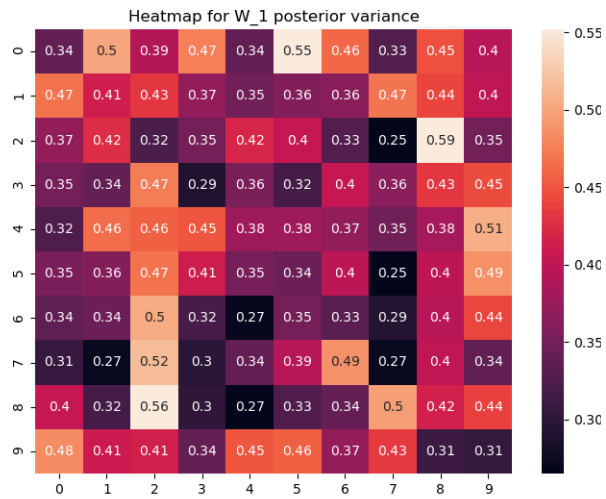


3 Program 3

4 Program 4

Black-box variational inference (BBVI) is more generic compared to parameter estimation via gradient descent. In BBVI, we compute an estimate of the gradient of the evidence lower bound (ELBO) using a sampling procedure instead of obtaining the gradient of the ELBO analytically. This renders BBVI applicable to a range of complicated models that parameter estimation via gradient descent will not be able to handle.





Took 2234.32 seconds to finish Program 4

5 Program 5