Step 1. Creating annotations and computed LD-score

a. Create annotation matrix for each chromosome. All = All SNPs, Conserved = SNP within conserved genes +/- 50kb.

SNP	CHR	BP	A1	A2	All	Conserved
rs1	22	1	T	C	1	1
rs2	22	1000	A	G	1	1
rs3	22	20001	A	G	1	0
…	…	…	…	…	…	…
…	…	…	…	…	…	…
rs1001	22	10002	C	T	1	0

b. Computing LD-scores with pre-computed UK Biobank LD matrices.

```
python compute_ldscores_from_ld.py \
  --annot annotation/annotations.22.annot.parquet \ #file in step a
  --ukb \
  --out lsdc/ldsc.22.parquet #ldsc score file
```

Step 2. Computing prior causal probabilities with PolyFun

a. Reformat GWAS summary data

```
python munge_polyfun_sumstats.py \
  --sumstats gwas/gwas_sumstats.gz \ #input gwas summary
  --n 327209 \
  --out gwas/sumstats_munged.parquet \ #gwas reformatted summary
  --min-info 0.6 \
  --min-maf 0.001
```

b. Run PolyFun with L2-regularized S-LDSC

```
python polyfun.py \
    --compute-h2-L2 \
    --no-partitions \
    --output-prefix l2_r_sldsc/prior \ #output l2-r-s-ldsc results
    --sumstats gwas/sumstats_munged.parquet \ #reformatted gwas
    --ref-ld-chr ldsc/ldsc. \ #ldsc score file from step 1
    --w-ld-chr ukb/weights. #From baseline-LF 2.2.UKB
```

Step 3. Fine mapping with SuiSE using pre-computed summary LD information from the UK Biobank

a. Perform fine mapping for each LD block with prior causal probabilities and without

```
#run fine-mapper
python finemapper.py \
    --ld LD_temp/chr1_46000001_49000001 \ #LD block LD file
    --sumstats l2_r_sldsc/prior.22.snpvar_ridge_constrained.gz \
    --n 327209 \
    --chr 22 \
    --start 46000001 \ #start of LD block
    --end 49000001 \ #end of LD block
    --method susie \
    --max-num-causal 5 \
     --out finemap_LDblock/finemap.UKB.1.46000001.49000001.gz

--non-funct #add this command if don't want to use priors causal probabilities
```

b. Aggregating the results

```
python aggregate_finemapper_results.py \
     --out-prefix finemap_LDblock/finemap.UKB \
     --chr 22 \
    --sumstats l2_r_sldsc/prior.22.snpvar_ridge_constrained.gz \
    --out finemap _agg/polyfun_agg.txt
```