## **Output for P3**

PS C:\Users\ADMIN> python "D:\FALL 2022\DM\P3\P3\k\_means\_cluster.py" "D:\FALL 2022\DM\P3\P3\UCI\_datasets\yeast\_test.txt" 2 5

After initialization: error = 121.7284

After iteration 1: error = 110.9938

After iteration 2: error = 110.4875

After iteration 3: error = 110.4065

After iteration 4: error = 110.3507

After iteration 5: error = 110.3327

PS C:\Users\ADMIN> python "D:\FALL 2022\DM\P3\P3\k\_means\_cluster.py" "D:\FALL 2022\DM\P3\P3\UCI datasets\yeast test.txt" 3 5

After initialization: error = 120.4518 After iteration 1: error = 106.5980 After iteration 2: error = 104.8089 After iteration 3: error = 103.8175 After iteration 4: error = 103.4579 After iteration 5: error = 103.2355

3. .

PS C:\Users\ADMIN> python "D:\FALL 2022\DM\P3\P3\k\_means\_cluster.py" "D:\FALL 2022\DM\P3\P3\UCI\_datasets\pendigits\_training.txt" 4 10 After initialization: error = 895437.7115 After iteration 1: error = 679122.0200

After iteration 2: error = 663520.0241

After iteration 2: error = 662520.0241

After iteration 3: error = 660644.3744

After iteration 4: error = 660259.9845

After iteration 5: error = 659420.2353

After iteration 6: error = 656843.0669

After iteration 7: error = 649505.1183

```
After iteration 8: error = 641311.7360
After iteration 9: error = 638380.3025
After iteration 10: error = 637218.1731
```

PS C:\Users\ADMIN> python "D:\FALL 2022\DM\P3\P3\k\_means\_cluster.py" "D:\FALL 2022\DM\P3\P3\UCI\_datasets\pendigits\_training.txt" 6 10

After initialization: error = 898564.4614

After iteration 1: error = 633820.8849
After iteration 2: error = 599033.7759
After iteration 3: error = 588285.7289
After iteration 4: error = 583921.2530
After iteration 5: error = 575281.5277
After iteration 6: error = 561555.3846
After iteration 7: error = 557493.9167
After iteration 8: error = 556394.6057
After iteration 9: error = 555762.1660
After iteration 10: error = 555493.1773