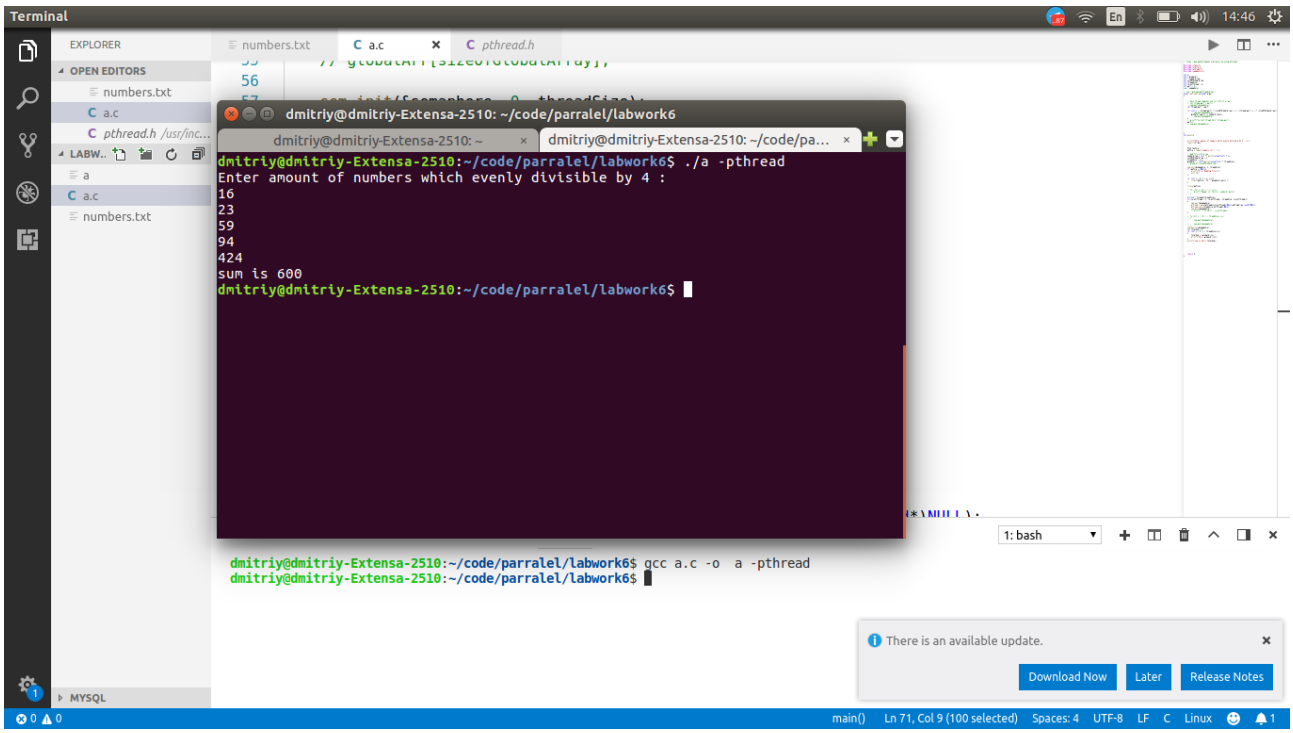


```c
// https://www.geeksforgeeks.org/sum-array-using-pthreads/

#include <stdio.h>
#include <stdlib.h>
#include <pthread.h>
#include <semaphore.h>

int n;
int * globalArr;
int * numberArray;
int sizeOfGlobalArray;
int threadSize;
int curentThread = 0;
int part = 0;
sem_t semaphore;

// tid = pthread_getthreadid_np();
void* sumFromArray(void* args)
{
// Each thread computes sum of 1/4th of array
// int thread_part = part++;
// sem_wait(&semaphore);
int thread_part = part;
```

```
for (int i = (thread_part) * (sizeOfGlobalArray); i < ((thread_part +1 ) *
(sizeOfGlobalArray)); i++){
// sem_wait(&semaphore);
globalArr[part] += numberArray[i];
// sem_post(&semaphore);
}
// printf("Current thread %d\n",thread_part);
part++;
// sem_post(&semaphore);
}
int main(){
printf("Enter amount of numbers which evenly divisible by 4 : \n");
scanf("%d",&n);


FILE *myFile;
myFile = fopen("numbers.txt", "r");

//read file into array
numberArray = (int *) malloc(sizeof(int) * n);
sizeOfGlobalArray = 4;
threadSize = n/4;
globalArr = (int*)malloc(sizeof(int) * threadSize);
// globalArr[sizeOfGlobalArray];

sem_init(&semaphore, 0, threadSize);
if (myFile == NULL){
printf("Error Reading File\n");
exit (0);
}

for (int i = 0; i < n; i++){
fscanf(myFile, "%d,", &numberArray[i] );
}

fclose(myFile);
// for (int i = 0; i < n; i++){
// printf("Number is: %d\n\n", numberArray[i]);
// }
pthread_t threads[threadSize];
for(curentThread = 0; curentThread < threadSize; curentThread++)
{
sem_wait(&semaphore);
pthread_create(&threads[curentThread],NULL,sumFromArray,(void*)NULL);
```

```
pthread_join(threads[curentThread],NULL);
sem_post(&semaphore);
// printf(" c th %d\n" , curentThread);
}
// for(int i = 0; i < threadSize; i++)
// {
// sem_wait(&semaphore);
// sem_post(&semaphore);
// }
sem_destroy(&semaphore);
int totalSum = 0;
for (int i = 0; i < threadSize;i++)
{
totalSum += globalArr[i];
printf("%d\n",globalArr[i]);
}
printf("sum is %d\n",totalSum);




return 0;
}
```