Name - Yash Lakhtariya
Enrollment number - 21162101012
Branch - CBA Batch - 41
OS Practical 6

Question - 1 :

Mr. Hitesh Pundit is working as a Branch Manager of Royal Indies Bank. On 14 February the cash collected from four from Single Window Operators cum cashiers of the bank as per below table:

Window No.	Cashier Name	Currency Collected
1	Mr. Anuj Dixit	100 Rs X 1580 Notes 200 Rs X 239 Notes 500 Rs X 276 Notes 2000 X 88 Notes
2	Mr. Ashish Pandey	100 Rs X 3320 Notes 200 Rs X 292 Notes 500 Rs X 232 Notes 2000 X 37 Notes
3	Mrs. Surita Kashyap	100 Rs X 1200 Notes 200 Rs X 39 Notes 500 Rs X 276 Notes 2000 X 46 Notes
4	Mr. Mrunal Sharma	100 Rs X 660 Notes 200 Rs X 209 Notes 500 Rs X 633 Notes 2000 X 55 Notes

Code :

```c
#include"stdio.h"
#include"pthread.h"

int a[4]={100,200,500,2000};

int b[4][4]={{1580,239,276,88},{3320,292,232,37},{1200,39,276,46},{660,209,633,55}};
int p=0;
int total=0;


void *count(){
   int sum=0;
   int k=p++;
   for(int i=0;i<4;i++){
       total+=a[i]*b[k][i];
       sum+=a[i]*b[k][i];
```

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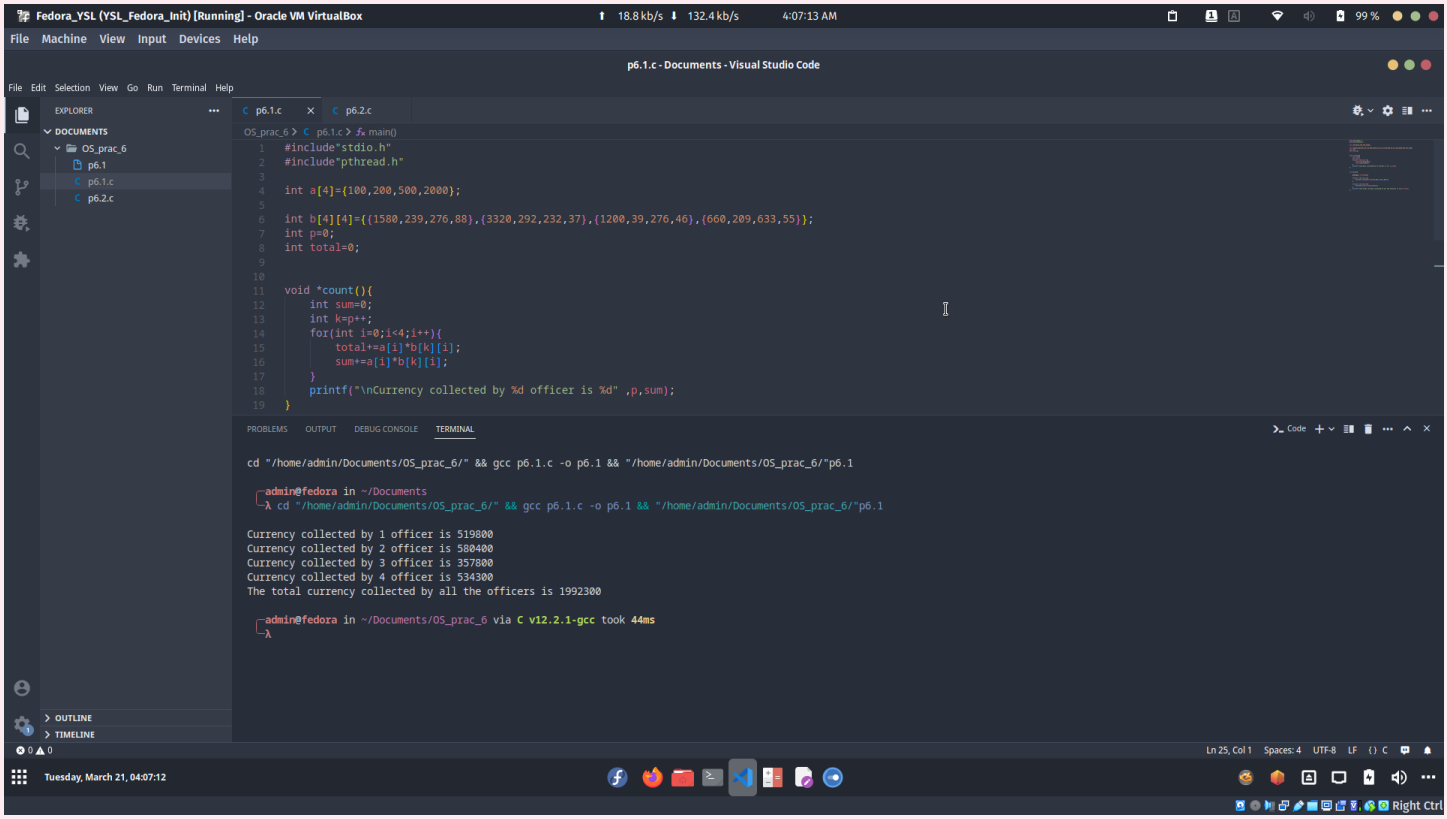
```
    }
    printf("\nCurrency collected by %d officer is %d" ,p,sum);
}


int main(){

    pthread_t threads[4];

    for(int i=0;i<4;i++){
        pthread_create(&threads[i],NULL,count,NULL);
    }
    for(int i=0;i<4;i++){
        pthread_join(threads[i],NULL);
    }
    printf("\nThe total currency collected by all the officers is %d\n",total);
}
```

Output :



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Question - 2 :

Being a Branch Manager, he would like to know the Closure Balance of his branch on a daily basis on his dashboard. Design the parallel algorithm and write a code in any language of your choice which can calculate the total cash collected by the branch on 14 February 2022. [Hint: Cash calculation must be done on the basis currency collected and ¼ of the task to be done by each Single Window Operators cum cashiers

Code :

```
#include"stdio.h"
#include"pthread.h"
#define MAX 16
#define MTHREAD 4

int a[]={1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16};

int sum[4]={0};
int part=0;


void *sumOfArray(void *  arg){
   int thread_part=part++;
   int i;

   for(i=thread_part *(MAX/4);i<(thread_part + 1) * (MAX /4);i++){
   sum[thread_part]+=a[i];
   }
}

int main(){
   pthread_t threads[MTHREAD];
   int i;
   int total_sum=0;

   for(int i=0;i<MTHREAD;i++){
       pthread_create(&threads[i],NULL,sumOfArray,(void*)NULL);
```

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```
    }

    for(int i=0;i<MTHREAD;i++){
        pthread_join(threads[i],NULL);
    }

    for(i=0;i<MTHREAD;i++)
    total_sum+=sum[i];

    printf("Sum is %d \n" ,total_sum);
}
```

Output :