

# CP 111 Computer Programming

## 2/2554 Section B01/B02

### Lab 11 Solution

#### 1. Problem name: Text\_File\_Write

```
#include <stdio.h>
int main()
{
    char line[101];
    FILE *infile;

    infile=fopen("text.dat","w");
    if(infile==NULL){
        printf("Opening File Error\n");
        return -1;
    }
    while(1)
    {
        gets(line);
        if(line[0]==0)
            break;

        fputs(line,infile);
        fputc('\n',infile);
    }
    fclose(infile);
    return 0;
}
```

## 2. Problem name: Text\_File\_Read\_Write

```
#include <stdio.h>
int main()
{
    FILE *infile, *outfile;
    int i, N_data, s1, s2, s3, s4, s5;
    double avg;

    infile=fopen("scores.dat", "r");
    if(infile==NULL){
        printf("Opening File Error for reading\n");
        return -1;
    }
    outfile=fopen("avg_scores.dat", "w");
    if(outfile==NULL){
        printf("Opening File Error for writing\n");
        return -1;
    }

    fscanf(infile, "%d", &N_data);
    fprintf(outfile, "%d\n", N_data);
    for(i=0; i<N_data; i++){
        fscanf(infile, "%d %d %d %d %d", &s1, &s2, &s3, &s4, &s5);
        avg=(double)(s1+s2+s3+s4+s5)/5;
        fprintf(outfile, "%d\t%d\t%d\t%d\t%d\t%f\n", s1, s2, s3, s4, s5, avg);
    }

    fclose(infile);
    fclose(outfile);
    return 0;
}
```

### 3. Problem name: Binary\_File\_Read\_Write

```
#include <stdio.h>
int main()
{
    FILE *infile,*outfile;
    char src_filename[300],dst_filename[300];
    char data;
    int n_bytes;
    gets(src_filename);
    gets(dst_filename);
    infile=fopen(src_filename,"rb");
    if(infile==NULL){
        printf("Opening File Error for reading\n");
        return -1;
    }
    outfile=fopen(dst_filename,"wb");
    if(outfile==NULL){
        printf("Opening File Error for writing\n");
        return -1;
    }
    n_bytes=0;
    while(1)
    {
        if(fread(&data,1,1,infile)==0)
            break;
        fwrite(&data,1,1,outfile);
        n_bytes++;
    }
    printf("%d\n",n_bytes);
    fclose(infile);
    fclose(outfile);
    return 0;
}
```

### 4. Problem name: File\_Random\_Access

```
#include <stdio.h>
void main()
{
    FILE *infile;
    int i,N,val,sum;
    infile=fopen("data.bin","rb");
    fread(&N,sizeof(int),1,infile);
    sum=0;
    for(i=1;i<=N;i=i+10)
    {
        fseek(infile,i*sizeof(int),SEEK_SET);
        fread(&val,sizeof(int),1,infile);
        sum=sum+val;
    }
    printf("%d\n",sum);
    fclose(infile);
}
```

### 5. Problem name: Min\_GT\_Mean\_malloc

```
#include <stdio.h>
#include <stdlib.h>
int main()
{
    int *data;
    int i,N,sum,min,first_min;
    double avg;

    scanf("%d",&N);
    data=(int *)malloc(N*sizeof(int));
    if(data==NULL)
        return -1;
    sum=0;
    for(i=0;i<N;i++)
    {
        scanf("%d",&data[i]);
        sum=sum+data[i];
    }
    avg=(double)sum/N;
    first_min=1;
    for(i=0;i<N;i++)
    {
        if(data[i]>(int)avg )
        {
            if(first_min==1)
            {
                min=data[i];
                first_min=0;
            }
            else
            {
                if(data[i]<min)
                    min=data[i];
            }
        }
    }
    printf("%d\n",min);
    free(data);
    return 0;
}
```

### 6. Problem name: Min\_Max\_3\_Macro

```
#include <stdio.h>
#define MIN(x,y) (x)>(y) ? (y) : (x)
#define MAX(x,y) (x)>(y) ? (x) : (y)

int main()
{
    int x1,x2,x3,minval,maxval;
    scanf("%d %d %d",&x1,&x2,&x3);
    minval=MIN(x1,MIN(x2,x3));
    maxval=MAX(x1,MAX(x2,x3));
    printf("%d\n", minval);
    printf("%d\n", maxval);
    return 0;
}
```