Problem 1 Code:

```c
//includes
#include <stdio.h>
#include <stdlib.h>
#include<math.h>
#include<string.h>
//prototype functions
double avg(double array[], int numElements);
double weightedAvg(double homeworkAvg,double examAvg);
int main(void){
    //defining variables
    int numHomework = 5;
    int numExam = 3;
    double hw[numHomework];
    double exam[numExam];
    double grades[3];
    int i;

    //scanning for user input of homework and exam grades
    for(i = 1;i<numHomework + 1;i++){
        printf("Enter your grade (%%) for HW #0%d: ", i);
        scanf("%lf",&hw[i-1]);
    }
    for(i = 1;i< numExam + 1;i++){
        printf("Enter your grade (%%) for Exam #0%d: ", i);
        scanf("%lf",&exam[i-1]);
    }

    //inputting the averages of the grades and the weighted average into an array
    for(i = 0; i < 3; i++){
        if(i == 2){
            grades[i] = weightedAvg(grades[i-2],grades[i-1]);
        } else if( i == 1){
            grades[i] = avg(exam,numExam);
        } else{
            grades[i] = avg(hw,numHomework);
        }


    }

    //outputting the final weighted grade
    printf("\nFinal Grade = %.2lf%%\n",grades[2]);
    return 0;
}

//function that just adds all the elements of an array then divides by number of elements
double avg(double array[], int numElements){
    double avg = 0;
    for(int i = 0;i< numElements;i++){
        avg += array[i];
    }

    return avg / numElements;
}

//function that gets weighted average using the given information from the assignement
double weightedAvg(double homeworkAvg,double examAvg){
    return ((.4 * homeworkAvg) + (.6 * examAvg));
}
```

Problem 1 Sample Inputs and Outputs:

```
zhong@JJ-Laptop /cygdrive/c/se185/jaden_burke_quiz05
$ ./q1
Enter your grade (%) for HW #01: 89
Enter your grade (%) for HW #02: 99
Enter your grade (%) for HW #03: 87
Enter your grade (%) for HW #04: 96
Enter your grade (%) for HW #05: 94
Enter your grade (%) for Exam #01: 89
Enter your grade (%) for Exam #02: 97
Enter your grade (%) for Exam #03: 93

Final Grade = 93.00%
```

```
zhong@JJ-Laptop /cygdrive/c/se185/jaden_burke_quiz05
$ ./q1
Enter your grade (%) for HW #01: 79
Enter your grade (%) for HW #02: 85
Enter your grade (%) for HW #03: 99
Enter your grade (%) for HW #04: 100
Enter your grade (%) for HW #05: 65
Enter your grade (%) for Exam #01: 84
Enter your grade (%) for Exam #02: 76
Enter your grade (%) for Exam #03: 20

Final Grade = 70.24%
```

Problem 2 Code:

```c
//includes
#include <stdio.h>
#include <stdlib.h>
#include<math.h>
#include<string.h>
int numStudents = 2;
int numAssignements = 4;
//prototype functions
char letterGrade(double grade);
double studentAverage(double studentGrades[numStudents][numAssignements],int numCols, int wantedRow);
int main(void){
    //variable declarations
    double studentGrades[numStudents][numAssignements];
    int i;
    int j;
    double holder;

    //getting user input
    printf("Please Enter assignement grades for student 1 and student 2\n");
    for(i = 0; i < numStudents; i++){
        for(j = 0; j < numAssignements; j++){
            printf("Student-%d Assignment-%d grade: ",i+1,j+1);
            scanf(" %lf",&studentGrades[i][j]);
        }
    }
    //outputting averages and letter grades

    printf("\nStudent 1 Avg = %.2lf",studentAverage(studentGrades,numAssignements,0));
    printf("\nStudent 1 Grade = %c",letterGrade(studentAverage(studentGrades,numAssignements,0)));
    printf("\nStudent 2 Avg = %.2lf",studentAverage(studentGrades,numAssignements,1));
    printf("\nStudent 2 Grade = %c",letterGrade(studentAverage(studentGrades,numAssignements,1)));
    return 0;
}
//takes the average of a given row of a 2d matrix
double studentAverage(double studentGrades[numStudents][numAssignements],int numCols, int wantedRow){
    double avg = 0;
    for(int i = 0;i < numCols;i++){
        avg += studentGrades[wantedRow][i];
    }
    return avg / (double)numCols;
}
//using given metric returns a letter grade based on score
char letterGrade(double grade){
    if(grade <=100 && grade >= 85){
        return 'A';
    } else if(grade >= 75){
        return 'B';
    } else if(grade >= 60){
        return 'C';
    } else {
        return 'F';
    }
}
```

Problem 2 Sample Inputs and Outputs:

```
zhong@JJ-Laptop /cygdrive/c/se185/jaden_burke_quiz05
$ ./q2
Please Enter assignement grades for student 1 and student 2
Student-1 Assignment-1 grade: 99
Student-1 Assignment-2 grade: 100
Student-1 Assignment-3 grade: 78
Student-1 Assignment-4 grade: 67
Student-2 Assignment-1 grade: 100
Student-2 Assignment-2 grade: 89
Student-2 Assignment-3 grade: 78
Student-2 Assignment-4 grade: 88

Student 1 Avg = 86.00
Student 1 Grade = A
Student 2 Avg = 88.75
Student 2 Grade = A
```

```
zhong@JJ-Laptop /cygdrive/c/se185/jaden_burke_quiz05
$ ./q2
Please Enter assignement grades for student 1 and student 2
Student-1 Assignment-1 grade: 40
Student-1 Assignment-2 grade: 42
Student-1 Assignment-3 grade: 49
Student-1 Assignment-4 grade: 45
Student-2 Assignment-1 grade: 67
Student-2 Assignment-2 grade: 68
Student-2 Assignment-3 grade: 62
Student-2 Assignment-4 grade: 63

Student 1 Avg = 44.00
Student 1 Grade = F
Student 2 Avg = 65.00
Student 2 Grade = C
```