Project 1:

```
//Toni Hunter 187009925
//ASSIGNMENT 3 PROGRECT 1
// Program simulates the rolling of two dice, rolling 36000 times. Calculate the sum of the two die
// use one dimensional array to tally the number of times each possible sum appears, print in tubular format.
//
#include <stdio.h>
#include <time.h>

int main(void)
{
   srand(time(NULL)); // seed random number generator
   int array[20] = {};

   for (int i=1; i <= 36000; i++)
   {
      int roll1 = (1 + rand() % 6);
      int roll2 = (1 + rand() % 6);
      int sum = roll1 + roll2;
      array[sum]++;
   }

   printf("| %s |%6s |\n", "Roll", "Sums");
   printf("|------|-------|\n");

   for(int i=2; i<=9; i++)
   {
      printf("|%d     |   %d|\n",i, array[i]);
   }
   for (int i =10; i <=12; i++)
   {
      printf("|%d    |   %d|\n",i, array[i]); //double digits mess up the formatting a bit
   }
}
```

Project 2:

```
//Toni Hunter 187009925
//ASSIGNMENT 3 PROGRECT 2(SALES COMMISSIONS)
// Use a one dimensional array of counters that determines how may of the salespeople earned
// salaries in each of the ranges provided.
//
#include <stdio.h>
#include <stdlib.h>

int main(void)
{
   double Sales;
   double Salary;

   int SalaryCount[9] = {0}; //sets array to be able to have 9 spots, 0 sets all spots to zero

   while(Sales != -1) // sentinel = -1
   {
      printf("\nPlease enter salesperson's gross sales(or -1 to end program): $");
      scanf("%lf", &Sales);

      Salary =(200 + (Sales*.09)); //salary equation

      // printf("The Salesperson's salary is $%0.2f\n", Salary);  //FOR CHECKING


      if (Salary >= 200 && Salary <= 299){
         SalaryCount[0]++; //count++ in specified element
      }
      else if (Salary >= 300 && Salary <= 399){
         SalaryCount[1]++;
      }
      else if (Salary >= 400 && Salary <= 499){
         SalaryCount[2]++;
      }
      else if (Salary >= 500 && Salary <= 599){
         SalaryCount[3]++;
      }
      else if (Salary >= 600 && Salary <= 699){
         SalaryCount[4]++;
      }
      else if (Salary >= 700 && Salary <= 799){
         SalaryCount[5]++;
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        }
        else if (Salary >= 800 && Salary <= 899){
            SalaryCount[6]++;
        }
        else if (Salary >= 900 && Salary <= 999){
            SalaryCount[7]++;
        }
        else if (Salary >= 1000){
            SalaryCount[8]++;
        }

    }

    //FORMATTING NEATNESS!!!
    printf("\nThe table below will display the range of salaries and the number of Salespersons
that earned them.\n");
    printf("\n ---------------------------------------\n");
    printf("| %s | %6s |\n", "Salary Range", "Number of Salespersons");
    printf("|--------------|----------------------|\n");
    printf("|$200-299      :         %d             |\n", SalaryCount[0]);
    printf("|$300-399      :         %d             |\n", SalaryCount[1]);
    printf("|$400-499      :         %d             |\n", SalaryCount[2]);
    printf("|$500-599      :         %d             |\n", SalaryCount[3]);
    printf("|$600-699      :         %d             |\n", SalaryCount[4]);
    printf("|$700-799      :         %d             |\n", SalaryCount[5]);
    printf("|$800-899      :         %d             |\n", SalaryCount[6]);
    printf("|$900-999      :         %d             |\n", SalaryCount[7]);
    printf("|$1000+        :        %d             |\n", SalaryCount[8]);
    printf(" ---------------------------------------\n");
}
```

Project 3:

```
//Toni Hunter 187009925
//ASSIGNMENT 3 PROGRECT 3(UNION OF SETS)
// Use one dimensional array. Read two sets of numbers (each set has 10 numbers). After reading the values,
// display all unique elements of both sets.
//
#include <stdio.h>


int main(void)
{
   int a[10], b[10], u[20]; // a = array 1, b = array 2, u = COMBO array holder
                        // initialized value of arrays is 10, u is 20

   int i;
   int j;
   int k;
   int y;
   int comb = 20;

   printf("Enter 10 values for the elements of array 1: \n");
   for (i=0; i<10; i++) //value in each spot of array
   {
      scanf("%d", &a[i]);
   }

   printf("\nEnter 10 values for the elements of array 2: \n");
   for (i=0; i<10; i++)
   {
      scanf("%d", &b[i]);
   }


   for(i=0; i<20; i++){
      u[i] = a[i]; //put a elements in u
   }
   for (i=0, j=10; j<20 && i<10; i++, j++){
      u[j] = b[i]; //put b elements in u, keeping track of where a left off
   }
   for (i= 0; i < comb; i++){ //comb is constantly changing so comb instead of 20
      for (j = i+1; j<comb; j++){
         if(u[i] == u[j]){ //compare elements of u with u
            for (k=j; k < comb - 1; k++){
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```
                u[k] = u[k+1];
            }
            comb--; // decrease size of comb
            j--;
        }
    }
}

printf("\nThe union of array 1 and array 2: \n");

for (i=0; i<comb; i++)
{
    printf("%d ", u[i]); //print elements of u
}
}
```