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PART 1 - 11 points each

1) // AverageValue
// This function takes an array of integers and
// returns the average of all the numbers
// Disregard numbers that are equal to 0
//int values[4] = { 10,20,30,0 };
//AverageValue(values, 4) ==> 20

```
int AverageValue(int arr[],int arraySize)
{
	int sum = 0;
	int numbers=0;
	for (int i = 0; i < arraySize; i++)
	{
		if (arr[i])
		{
			sum += arr[i];
			numbers++;
		}
	}
	return(sum/ numbers);
}
```

2) // swaps two numbers
//int n1 = 2, n2 = 4;
//Swap(n1, n2) ==> n1 = 4 n2 = 2

```
void Swap(int &n1, int &n2)
{
	int temp = n1;
	n1 = n2;
	n2 = temp;
}
```

3) // goes through an array and returns the smallest number
// note the smallest number can be negative
// SmallestValue({1,2,-1}, 3) ==> -1
// Note: largest possible integer value = 2,147,483,647

```
int SmallestValue(int arr[], int arraySize)
{
	int smallestValue = arr[0]; // int smallestValue =  2147483648
	for (int i = 1; i < arraySize; i++)
	{
		if (arr[i] < smallestValue)
			smallestValue = arr[i];
	}
	return(smallestValue);
}
```

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4) // takes as input the days of week and outputs using the Modulus (%) operation

```
//string daysOfWeek[7] = { "Sun","Mon","Tue","Wed","Thu","Fri","Sat" };
//EveryOtherDay(daysOfWeek) ==> Sun Tue Thu Sat
void EveryOtherDay(string daysOfWeek[])
{
	for (int i = 0; i < 7; i++)
	{
		if (i % 2 == 0)
			cout << daysOfWeek[i] << " ";
	}
}
```

5) // adds string1 to the end of string2 and places the result in newString

```
// char newString[100]; char str1[20] = "Hello "; str2[20] = "Fred"
// ==> newString = "Hello Fred"
// the first part of this function has been done for you
void Concatenate(char newString[], int newStringSize, char str1[], char str2[])
{
	//initialize the buffer to all zeros
	// to make sure resulting string is terminated by a 0
	for (int i = 0; i < newStringSize; i++)
		newString[i] = 0;

	// use while loop to copy the first string
	int i = 0;
	while (str1[i])
	{
		newString[i] = str1[i];
		i++;
	}

	// Add str2 to the buffer
	// Add str2 to the buffer
	int x = 0;
	while (str2[x])
	{
		newString[i] = str2[x];
		i++;
		x++;
	}
}
```

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6) What is the output of the code below?

```
void DoSomeThing(int i, int &j)
{
        i++;
        j *= i;
}
int i = 2, j = 5;
DoSomeThing(i, j);
cout << i << j endl;
```

ANSWER
2,15

PART II 5 points each
// Something is very wrong with the code below.
// Fix the the code so that it works in a predicatable fashion.

ANSWERS IN RED
A)

```
int count = 0;
while (count < 100)
{
        cout << count;
        count++;
}
```

B)

```
int a, b;
cin >> a;
cin >> b;
int sum = a + b;
cout << "Enter two numbers to add: ";
cin >> a;
cin >> b;
cout << "The sum is: " << sum;
```

C)

```
char x = 'Y';
while (x == 'Y')
{
        //...
        cout << "Continue? (Y/N)";
        cin >> x;
}
```

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D)

```
int x;
for (x = 0; x<100; x++);
cout << x;
```

E)

```
int array[11];
for (int x = 1; x <= 10; x++)
        cout << array[x];
```

F)

```
int a = 5;
int b = 7;
while ((a > 4 && b > 4) | b < 50)
{
        a--;
}
```

G)

```
char str[8] = { 'A','B','C','D','\0' };
cout << str << endl;
```