Lab EC

NOTE: This lab is graded out of 0 points and can only increase your final grade, however PLEASE review the plagiarism policy, as it is still in effect for this extra credit lab! This lab is intended to help you study for exam 2b, and to give you additional practice. The TAs will only provide minimal help with this lab, as their attention will be focused on other issues, including lab 13.

[Extra Credit Lab]

Download **prac.o**, create an assembly file prac.S with the global functions EmployeeReport, Reverse, and Palindrome, and then build your program using:

```
aarch64-linux-gnu-gcc -o prac prac.o prac.S
```

For a more verbose output, add any argument to your execution:

```
./prac 1
```

[EmployeeReport Function]

1. Write an assembly function called EmployeeReport. This function is prototyped as follows:

```
int EmployeeReport(Employee *dst, const Employee *src, int num_employees, int position);
```

2. The Employee structure looks as follows:

```
struct Employee {
    char age;
    int id;
    int position;
};
```

3. This function will look at the employees in src (the number of employees given by num_employees) that match the position. Those that match will be copied into dst. Finally, your function will return the number of employees that it copied into dst. Assume that dst has enough memory allocated to contain up to *num_employees* structures.

[Reverse Function]

1. Write an assembly function called Reverse. This function is prototyped as follows:

```
void Reverse(short array[], int size);
```

2. This function will take an array and reverse it. For example: an array of 1, 2, 3, 4, 5, 6, 7, 8 will be reversed to 8, 7, 6, 5, 4, 3, 2, 1 by your assembly function.

[Palindrome Function]

1. Write an assembly function called Palindrome. This function is prototyped as follows:

```
int Palindrome(const char *c_style_string);
```

2. This function will check to see if the given string is a palindrome. That is, the word is the same read forwards as it is read backwards. For example, *racecar* is the exact same string if you read it left-to-right or right-to-left. If your function determines the string is a palindrome, return 1 (true), otherwise return 0 (false).

3. Notice that the parameter given to your function is a C-style string.

[Testing]

1. Since the testing program runs with randomized values, it is best to test your program by running the test several times.

[You are finished with this lab!]

Rename prac.S to prac.txt and submit it.

Points	0
Submitting	a file upload
File Types	txt

Due	For	Available from	Until
Dec 5, 2017	Everyone	-	Dec 5, 2017 at 11:59pm

Extra Credit Lab

Criteria	Ratings		Pts
EmployeeReport	**35.0 pts** **Full Marks**	**0.0 pts** **No Marks**	35.0 pts
Reverse	**30.0 pts** **Full Marks**	**0.0 pts** **No Marks**	30.0 pts
Palindrome	**35.0 pts** **Full Marks**	**0.0 pts** **No Marks**	35.0 pts
			Total Points: 100.0