//Name: Yu Sheng(Julia)

//CS246 Assignment #5

//Date: 03/05/2018

# include <stdio.h>

# include <ctype.h>

# include <string.h>

void encrypt1(char message[], char codedMsg[], int n, int shift);

void encrypt2(char \*message, char \*codedMsg, int shift);

int main(void){

char in[80];

char codedMsg[80];

int shift;

printf("Enter message to be encrypted: ");

int i=0;

char ch;

while((ch=getchar())!='\n'){

in[i++]=ch;

}

printf("Enter shift amount (1-25): ");

scanf("%d",&shift);

encrypt1(in,codedMsg, strlen(in),shift);

printf("Ecrypted message: %s\n",codedMsg);

encrypt2(in,codedMsg,shift);

printf("Ecrypted message: %s\n",codedMsg);

return 0;

}

void encrypt1(char message[], char codedMsg[], int n, int shift){

for(int i=0;i<n;i++){

char ch=message[i];

if(isalpha(ch)){

if(isupper(ch))

codedMsg[i]=((ch-'A') + shift) % 26 + 'A';

if(islower(ch))

codedMsg[i]=((ch-'a') + shift) % 26 + 'a';

}else

codedMsg[i]=ch;

}

codedMsg[n]='\0';

return;

}

void encrypt2(char \*message, char \*codedMsg, int shift){

char ch;

while(ch=\*message++){

if(isalpha(ch)){

if(isupper(ch))

\*codedMsg++=((ch-'A') + shift) % 26 + 'A';

if(islower(ch))

\*codedMsg++=((ch-'a') + shift) % 26 + 'a';

}else

\*codedMsg++=ch;

}

codedMsg[n]='\0';

return;

}

Result

Script started on 2018-03-05 16:07:25-0500

#]0;jsheng@megrez:~/cs246#[jsheng@megrez cs246]$ ./cipher

Enter message to be encrypted: Go ahead, make my day.

Enter shift amount (1-25): 3

Ecrypted message: Jr dkhdg, pdnh pb gdb.

Ecrypted message: Jr dkhdg, pdnh pb gdb.

#]0;jsheng@megrez:~/cs246#[jsheng@megrez cs246]$ ./cipher

Enter message to be encrypted: With great power comes great responsibility.

Enter shift amount (1-25): 3

Ecrypted message: Zlwk juhdw srzhu frphv juhdw uhvsrqvlelolwb.

Ecrypted message: Zlwk juhdw srzhu frphv juhdw uhvsrqvlelolwb.

#]0;jsheng@megrez:~/cs246#[jsheng@megrez cs246]$ exit

exit

Script done on 2018-03-05 16:08:49-0500

Reflection

When I first saw the assignment, I decide to use gets() since it is the new method we learned and I want to practice using it. However, when I tried to run the program, I find I was not able to compile it and it said this gets() is dangerous. Therefore, I used getchar() instead. I chose not use scanf() because it does not records the space but we need space in this assignment. Second problem I encountered is that for both functions (encrypt1() and encrypt2()), they print two extra random symbols at the end of output. At this time, I think of what professor said in class, that sometimes we should close the string using ‘\0’ by ourselves. Therefore, when I assign this symbol to the end of coded message array, extra symbols stop showing up.