

Intermediate Programming Project (4/21/08)

Your Name:

Public Key Encryption Part 1

Due Wednesday, April 23

Text	"X marks the spot."
ASCII code	88 32 109 97 114 107 115 32 116 104 101 32 115 112 111 116 46
Plain text, P_i	$P_1 = 88$, $P_2 = 32$, $P_3 = 109$, ... , $P_{17} = 46$
n	187
E	3
$C_i = P_i^E \% n$	$C_1 = 88^3 \% 187 = 44$, $C_2 = 43$, $C_3 = 54$, ... , $C_{17} = 96$

Given the ingredients above, you the **sender** are going to **encrypt** your message. Please note that each character will be encrypted separately – this is different from how we did things in class, where we made the entire message into a single, very large number.

Your assignment is to write a program to encrypt this message, one character at a time. You will need these methods in your program:

```
int ToPlainText(char s) {}
```

```
int Totient(int n) {}
```

```
int ToCipherText(int plainText, int E, int n) {}
```