1.在同個程式中，實作出凱薩密碼加解密的功能，並且能自己選擇加密解密

```
    while(TRUE) {
        printf("enter 0 to encrypt, enter 1 to decrypt, enter 2 to exit : \n");
        scanf("%d", &choice);
        fflush(stdin);
        if(choice == 2) {
            break;
        }
        printf("please enter key : \n");
        scanf("%d", &key);
        fflush(stdin);
```

輸入 0 就加密

輸入 1 就解密

輸入 2 就跳出迴圈

加密

```
24          if(choice == 0) {
25              printf("please enter plaintext : \n");
26              gets(plaintext);
27              //printf("%s        %d\n", plaintext, strlen(plaintext));
28              for(i = 0; i < strlen(plaintext); i++) {
29                  if(plaintext[i] >= 'A' && plaintext[i] <= 'Z') {
30                      plaintext[i] += key;
31                      if(plaintext[i] > 'Z') {
32                          plaintext[i] -= 26;
33                      }
34                  }
35                  else if(plaintext[i] >= 'a' && plaintext[i] <= 'z') {
36                      plaintext[i] += key;
37                      if(plaintext[i] > 'z') {
38                          plaintext[i] -= 26;
39                      }
40                  }
41                  printf("%c", plaintext[i]);
42              }
43              printf("\n\n");
44          }
```

解密

```
45          else {
46              printf("please enter ciphertext : \n");
47              gets(ciphertext);
48              //printf("%s        %d\n", ciphertext, strlen(ciphertext));
49              for(i = 0; i < strlen(ciphertext); i++) {
50                  if(ciphertext[i] >= 'A' && ciphertext[i] <= 'Z') {
51                      ciphertext[i] -= key;
52                      if(ciphertext[i] < 'A') {
53                          ciphertext[i] += 26;
54                      }
55                  }
56                  else if(ciphertext[i] >= 'a' && ciphertext[i] <= 'z') {
57                      ciphertext[i] -= key;
58                      if(ciphertext[i] < 'a') {
59                          ciphertext[i] += 26;
60                      }
61                  }
62                  printf("%c", ciphertext[i]);
63              }
64              printf("\n\n");
65          }
66      }
```

2. 加分題

```
17      for(j = 0; j < 25 ; j++) {
18          printf("key = %d : ", j+1);
19
20          for(i = 0; i < strlen(ciphertext); i++) {
21              if(ciphertext[i] >= 'A' && ciphertext[i] <= 'Z') {
22                  ciphertext[i] -= key;
23                  if(ciphertext[i] < 'A') {
24                      ciphertext[i] += 26;
25                  }
26              }
27              else if(ciphertext[i] >= 'a' && ciphertext[i] <= 'z') {
28                  ciphertext[i] -= key;
29                  if(ciphertext[i] < 'a') {
30                      ciphertext[i] += 26;
31                  }
32              }
33              printf("%c", ciphertext[i]);
34          }
35          printf("\n");
36      }
```