



# 岐阜工業高等専門学校

## 第4回課題

電子制御工学科：情報処理 I

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# 1 はじめに

## 1.1 実行環境

この課題のプログラムは以下の環境で動作することが確認されている：

- OS: Arch Linux
- CPU アーキテクチャ: x86\_64
- C コンパイラ: gcc バージョン 14.2.1 20250322 (GCC)
- C コンパイラオプション: -Wall <ソースコード名> -o <プログラム名>

## 2 演習2－1

2つの整数値を読み込み、前者の値が後者の何%であるかを表示するプログラム。

### 2.1 コードリスト

演習2－1

```
1 #include <stdio.h>
2
3 int main(void) {
4     int x;
5     int y;
6
7     printf("Integer x: ");
8     scanf("%d", &x);
9     printf("Integer y: ");
10    scanf("%d", &y);
11
12    printf("Value of x is %d%% of y.", x * 100 / y);
13
14    return 0;
15 }
```

### 2.2 実行結果

```
information-processing-1_4th-class/programs/prog1 on ▶ main [x!?] via C v14.2.1-gcc
▶ gcc -Wall main.c -o main

information-processing-1_4th-class/programs/prog1 on ▶ main [x!?] via C v14.2.1-gcc
▶ ./main
Integer x: 32
Integer y: 50
Value of x is 64% of y.
information-processing-1_4th-class/programs/prog1 on ▶ main [x!?] via C v14.2.1-gcc took 8s
▶ ./main
Integer x: 53
Integer y: 75
Value of x is 70% of y.
information-processing-1_4th-class/programs/prog1 on ▶ main [x!?] via C v14.2.1-gcc took 8s
▶ █
```

### 3 演習2－2

2つの整数値を読み込み、それらの和と積を表示するプログラム。

#### 3.1 コードリスト

演習2－2

```
1 #include <stdio.h>
2
3 int main(void) {
4     int a;
5     int b;
6
7     printf("Integer a: ");
8     scanf("%d", &a);
9     printf("Integer b: ");
10    scanf("%d", &b);
11
12    printf("Sum of two integers is %d, and product is %d.", a+b, a*b);
13
14    return 0;
15 }
```

#### 3.2 実行結果

```
information-processing-1_4th-class/programs/prog2 on | main [x!?] via C v14.2.1-gcc
> gcc -Wall main.c -o main

information-processing-1_4th-class/programs/prog2 on | main [x!?] via C v14.2.1-gcc
> ./main
Integer a: 23
Integer b: 4
Sum of two integers is 27, and product is 92.
information-processing-1_4th-class/programs/prog2 on | main [x!?] via C v14.2.1-gcc took 7s
> ./main
Integer a: 72
Integer b: 3
Sum of two integers is 75, and product is 216.
information-processing-1_4th-class/programs/prog2 on | main [x!?] via C v14.2.1-gcc took 6s
> |
```

## 4 List 2 – 2 + $\alpha$

2桁以上の正の整数の十の位の数字を表示するプログラム。

### 4.1 コードリストティング

List 2 – 2 + $\alpha$

```
1 #include <stdio.h>
2
3 int main(void) {
4     int n;
5
6     printf("Integer\n:");
7     scanf("%d", &n);
8
9     // Don't trust user input
10    if (n < 10) {
11        printf("Integer\nmust be more than 2 digits.");
12        return 1;
13    }
14
15    printf("Tens digit of interger n is %d.", n / 10 % 10);
16
17    return 0;
18 }
```

### 4.2 実行結果

```
information-processing-1_4th-class/programs/lst22 on ▶ main [x?]
▶ gcc -Wall main.c -o main

information-processing-1_4th-class/programs/lst22 on ▶ main [x?]
▶ ./main
Integer n: 2
Integer n must be more than 2 digits.
information-processing-1_4th-class/programs/lst22 on ▶ main [x?]
▶ ./main
Integer n: 32
Tens digit of interger n is 3.
information-processing-1_4th-class/programs/lst22 on ▶ main [x?]
▶ ./main
Integer n: 5643
Tens digit of interger n is 4.
information-processing-1_4th-class/programs/lst22 on ▶ main [x?]
▶
```

## 5 課題4

入力した三桁の正の整数の数字の並びを逆順させた数字を表示するプログラム。

### 5.1 コードリストティング

課題4

```

1 #include <stdio.h>
2
3 int main(void) {
4     int n;
5
6     printf("Integer\n:");
7     scanf("%d", &n);
8
9     // Throw error when n is not in range of 100 <= n <= 999
10    if (n < 100 || n > 999) {
11        printf("Integer\nmust be 3 digit number");
12        return 1;
13    }
14
15    int a, b, c, m; // a * 10^2 + b * 10^1 + c * 10^0 = n
16
17    a = n / 100;
18    b = n / 10 % 10;
19    c = n % 10;
20
21    m = c * 100 + b * 10 + a; // m is reversed n
22
23    printf("Reversed integer is %d.", m);
24
25    return 0;
26 }
```

### 5.2 実行結果

```

information-processing-1_4th-class/programs/rev3dig on | main [x!?] via C v14.2.1-gcc
> gcc -Wall main.c -o main
information-processing-1_4th-class/programs/rev3dig on | main [x!?] via C v14.2.1-gcc
> ./main
Integer n: 32
Integer n must be 3 digit number
information-processing-1_4th-class/programs/rev3dig on | main [x!?] via C v14.2.1-gcc took 3s
> ./main
Integer n: 64343
Integer n must be 3 digit number
information-processing-1_4th-class/programs/rev3dig on | main [x!?] via C v14.2.1-gcc took 2s
> ./main
Integer n: 432
Reversed integer is 234.
information-processing-1_4th-class/programs/rev3dig on | main [x!?] via C v14.2.1-gcc took 3s
> ./main
Integer n: 786
Reversed integer is 687.
information-processing-1_4th-class/programs/rev3dig on | main [x!?] via C v14.2.1-gcc took 4s
> |
```

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Last Compiled(UN\*X Time): 1746068726