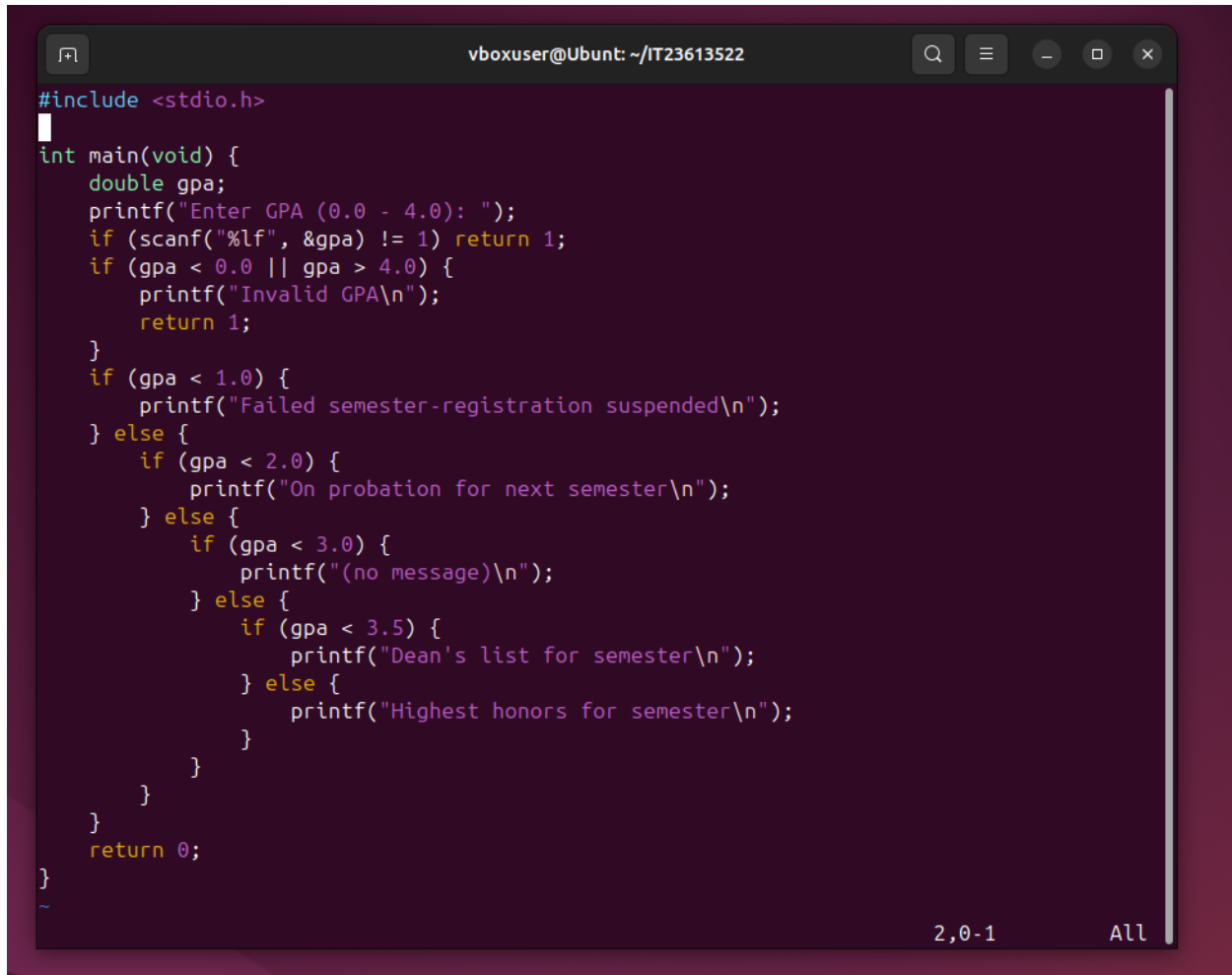


# Programming Methodology - SE1012

## Lab 5

IT23613522

### Question 1



```
vboxuser@Ubuntu: ~/IT23613522
#include <stdio.h>

int main(void) {
    double gpa;
    printf("Enter GPA (0.0 - 4.0): ");
    if (scanf("%lf", &gpa) != 1) return 1;
    if (gpa < 0.0 || gpa > 4.0) {
        printf("Invalid GPA\n");
        return 1;
    }
    if (gpa < 1.0) {
        printf("Failed semester-registration suspended\n");
    } else {
        if (gpa < 2.0) {
            printf("On probation for next semester\n");
        } else {
            if (gpa < 3.0) {
                printf("no message\n");
            } else {
                if (gpa < 3.5) {
                    printf("Dean's list for semester\n");
                } else {
                    printf("Highest honors for semester\n");
                }
            }
        }
    }
    return 0;
}
```

2,0-1 All

```
vboxuser@Ubunt: ~/IT23613522
vboxuser@Ubunt:~/IT23613522$ vim s.c
vboxuser@Ubunt:~/IT23613522$ gcc s.c -o s
vboxuser@Ubunt:~/IT23613522$ ./s
Enter GPA (0.0 - 4.0): 3
Dean's list for semester
vboxuser@Ubunt:~/IT23613522$ ./s
Enter GPA (0.0 - 4.0): 1
On probation for next semester
vboxuser@Ubunt:~/IT23613522$ ./s
Enter GPA (0.0 - 4.0): 2
(no message)
vboxuser@Ubunt:~/IT23613522$
```

## Question2

```
vboxuser@Ubunt: ~/IT23613522
#include <stdio.h>
#include <math.h>

int main(void) {
    double wt_lb, ht_in;
    printf("Enter weight (lb) and height (in): ");
    if (scanf("%lf %lf", &wt_lb, &ht_in) != 2) return 1;
    if (ht_in <= 0.0) { printf("Invalid height\n"); return 1; }
    double bmi = (wt_lb / (ht_in * ht_in)) * 703.0;
    bmi = round(bmi * 10.0) / 10.0;
    printf("BMI: %.1f\n", bmi);
    if (bmi < 18.5) printf("Category: Underweight\n");
    else if (bmi < 25.0) printf("Category: Normal weight\n");
    else if (bmi < 30.0) printf("Category: Overweight\n");
    else printf("Category: Obese\n");
    return 0;
}
```

```
vboxuser@Ubunt: ~/IT23613522
vboxuser@Ubunt:~/IT23613522$ gcc s.c -o s -lm
vboxuser@Ubunt:~/IT23613522$ ./s
Enter weight (lb) and height (in): 50
100
BMI: 3.5
Category: Underweight
vboxuser@Ubunt:~/IT23613522$
```

### Question 3

```
vboxuser@Ubunt: ~/IT23613522
#include <stdio.h>

int main(void) {
    int count = 1;
    while (count <= 5) {
        printf("%d\n", count);
        count++;
    }
    return 0;
}
```

10,1 All

```
vboxuser@Ubunt: ~/IT23613522
vboxuser@Ubunt:~/IT23613522$ vim s.c
vboxuser@Ubunt:~/IT23613522$ gcc s.c -o s -lm
vboxuser@Ubunt:~/IT23613522$ ./s
1
2
3
4
5
vboxuser@Ubunt:~/IT23613522$
```

### Question 4

```
vboxuser@Ubunt: ~/IT23613522
#include <stdio.h>

int main(void) {
    for (int i = 1; i <= 5; i++) {
        printf("%d\n", 4 * i);
    }
    return 0;
}
```

8,1 All

```
vboxuser@Ubuntu: ~/IT23613522
vboxuser@Ubuntu:~/IT23613522$ vim s.c
vboxuser@Ubuntu:~/IT23613522$ gcc s.c -o s -lm
vboxuser@Ubuntu:~/IT23613522$ ./s
4
8
12
16
20
vboxuser@Ubuntu:~/IT23613522$
```

## Question 5

```
vboxuser@Ubuntu: ~/IT23613522
#include <stdio.h>

int main(void) {
    int num;
    do {
        printf("Please enter a positive number:\n");
        if (scanf("%d", &num) != 1) return 1;
    } while (num <= 0);
    printf("You entered: %d\n", num);
    return 0;
}
```

11,1 All

```
vboxuser@Ubuntu: ~/IT23613522
vboxuser@Ubuntu:~/IT23613522$ vim s.c
vboxuser@Ubuntu:~/IT23613522$ gcc s.c -o s
vboxuser@Ubuntu:~/IT23613522$ ./s
Please enter a positive number:
50
You entered: 50
vboxuser@Ubuntu:~/IT23613522$
```

## Question6

```
vboxuser@Ubuntu: ~/IT23613522
#include <stdio.h>

int main(void) {
    char status;
    for (int i = 1; i <= 5; i++) {
        if (printf("Enter status for order %d: ", i) < 0) return 1;
        if (scanf(" %c", &status) != 1) return 1;
        if (status == 'I' || status == 'i') {
            printf("Skipping order %d\n", i);
            continue;
        } else if (status == 'S' || status == 's') {
            printf("Stopping at order %d\n", i);
            break;
        } else if (status == 'V' || status == 'v') {
            printf("Processing order %d\n", i);
        } else {
            printf("Invalid code for order %d\n", i);
        }
    }
    return 0;
}
```

21,1 All

```
vboxuser@Ubuntu: ~/IT23613522
vboxuser@Ubuntu:~/IT23613522$ vim s.c
vboxuser@Ubuntu:~/IT23613522$ gcc s.c -o s
vboxuser@Ubuntu:~/IT23613522$ ./s
Enter status for order 1: i
Skipping order 1
Enter status for order 2: s
Stopping at order 2
vboxuser@Ubuntu:~/IT23613522$ ./s
Enter status for order 1: i
Skipping order 1
Enter status for order 2: v
Processing order 2
Enter status for order 3: v
Processing order 3
Enter status for order 4: v
Processing order 4
Enter status for order 5: i
Skipping order 5
vboxuser@Ubuntu:~/IT23613522$
```

## Question7

```
vboxuser@Ubunt: ~/IT23613522
#include <stdio.h>

int main(void) {
    int n = 5;
    while (n >= 0) {
        printf("%d\n", n);
        n--;
    }
    printf("Countdown complete.\n");
    return 0;
}
```

11,1 All

```
vboxuser@Ubunt: ~/IT23613522
vboxuser@Ubunt:~/IT23613522$ vim s.c
vboxuser@Ubunt:~/IT23613522$ gcc s.c -o s
vboxuser@Ubunt:~/IT23613522$ ./s
5
4
3
2
1
0
Countdown complete.
vboxuser@Ubunt:~/IT23613522$
```