PF-LAB-5-ASSIGNMENT

PROBLEM-1

```c
C prob1.c > ...
1    #include <stdio.h>
2    void main() {
3        int age;
4        printf("Enter your age: ");
5        scanf("%d", &age);
6        if (age < 13) {
7            printf("You are a Child!");
8        } else if (age >= 13 && age < 20) {
9            printf("You are a Teenager!");
10       } else if (age >= 20 && age < 64) {
11           printf("You are an Adult!");
12       } else printf("You are a Senoir!");
13   }
```

```
OUTPUT    DEBUG CONSOLE    TERMINAL    PORTS

Microsoft Windows [Version 10.0.22631.4169]
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D:\MY ASSIGNMENTS\PF-LAB-ASSIGNMENT\LAB-5>gcc prob1.c -o prob1.exe

D:\MY ASSIGNMENTS\PF-LAB-ASSIGNMENT\LAB-5>prob1.exe
Enter your age: 23
You are an Adult!
D:\MY ASSIGNMENTS\PF-LAB-ASSIGNMENT\LAB-5>prob1.exe
Enter your age: 78
You are a Senoir!
D:\MY ASSIGNMENTS\PF-LAB-ASSIGNMENT\LAB-5>
```

PROBLEM-2

```c
#include <stdio.h>
void main() {
    int number;
    printf("Enter a number: ");
    scanf("%d", &number);
    if (number == 0) {
        printf("%d is a zero!", number);
    }
    else if (number < 0) {
        printf("%d is a negative number", number);
    }
    else if (number > 0) {
        if (number %2 == 0) {
            printf("%d is an even number!", number);
        }
        else if (number %2 != 0) {
            printf("%d is an odd number!", number);
        }
    }
}
```

```
OUTPUT    DEBUG CONSOLE    TERMINAL    PORTS

D:\MY ASSIGNMENTS\PF-LAB-ASSIGNMENT\LAB-5>gcc prob2.c -o prob2.exe

D:\MY ASSIGNMENTS\PF-LAB-ASSIGNMENT\LAB-5>prob2.exe
Enter a number: 9
9 is an odd number!
D:\MY ASSIGNMENTS\PF-LAB-ASSIGNMENT\LAB-5>prob2.exe
Enter a number: 0
0 is a zero!
D:\MY ASSIGNMENTS\PF-LAB-ASSIGNMENT\LAB-5>prob2.exe
Enter a number: -3
-3 is a negative number
D:\MY ASSIGNMENTS\PF-LAB-ASSIGNMENT\LAB-5>
```

PROBLEM-3

```c
C prob3.c > 🞂 main()
1    #include <stdio.h>
2    void main() {
3        int num;
4        printf("Enter a number: ");
5        scanf("%d", &num);
6        if (num % 3 == 0 && num % 5 == 0)
7        printf("%d is divisble by both 3 & 5", num);
8        else printf("%d is not divisble by both 3 & 5", num);
9    }
```

```
OUTPUT    DEBUG CONSOLE    TERMINAL    PORTS

D:\MY ASSIGNMENTS\PF-LAB-ASSIGNMENT\LAB-5>gcc prob3.c -o prob3.exe

D:\MY ASSIGNMENTS\PF-LAB-ASSIGNMENT\LAB-5>prob3.exe
Enter a number: 45
45 is divisble by both 3 & 5
D:\MY ASSIGNMENTS\PF-LAB-ASSIGNMENT\LAB-5>prob3.exe
Enter a number: 18
18 is not divisble by both 3 & 5
D:\MY ASSIGNMENTS\PF-LAB-ASSIGNMENT\LAB-5>
```

PROBLEM-4

```c
C prob4.c > ...
1    #include <stdio.h>
2    void main() {
3        int age;
4        char nationality;
5        printf("Enter your age: ");
6        scanf("%d", &age);
7        printf("\nEnter your nationaltiy: ");     //initials only
8        scanf(" %c", &nationality);
9        if(age >= 18 && (nationality == 'P' || nationality == 'p')) {
10           printf("You are eligible to vote!\n");
11       }
12       else printf("You are not eligible!\n");
13   }
```

```
OUTPUT    DEBUG CONSOLE    TERMINAL    PORTS

D:\MY ASSIGNMENTS\PF-LAB-ASSIGNMENT\LAB-5>gcc prob4.c -o prob4.exe

D:\MY ASSIGNMENTS\PF-LAB-ASSIGNMENT\LAB-5>prob4.exe
Enter your age: 19

Enter your nationaltiy: p
You are eligible to vote!

D:\MY ASSIGNMENTS\PF-LAB-ASSIGNMENT\LAB-5>prob4.exe
Enter your age: 17

Enter your nationaltiy: P
You are not eligible!
```

PROBLEM-5

```c
C prob5.c > ⊗ main()
1    #include <stdio.h>
2    void main() {
3        int num1, num2;
4        printf("Enter two numbers: ");
5        scanf("%d %d", &num1, &num2);
6        (num1 > num2) ? printf(" %d is maximum!", num1) :
7        (num2 > num1) ? printf("%d is maximum!", num2) : printf("Number1 & Number2 are equal!");
8    }
```

```
OUTPUT    DEBUG CONSOLE    TERMINAL    PORTS

D:\MY ASSIGNMENTS\PF-LAB-ASSIGNMENT\LAB-5>gcc prob5.c -o prob5.exe

D:\MY ASSIGNMENTS\PF-LAB-ASSIGNMENT\LAB-5>prob5.exe
Enter two numbers: 123
429
429 is maximum!
D:\MY ASSIGNMENTS\PF-LAB-ASSIGNMENT\LAB-5>prob5.exe
Enter two numbers: 128
128
Number1 & Number2 are equal!
D:\MY ASSIGNMENTS\PF-LAB-ASSIGNMENT\LAB-5>
```

PROBLEM-6

```c
C prob6.c > ⊙ main()
1    #include <stdio.h>
2    void main() {
3        int num;
4        printf("Enter a number: ");
5        scanf("%d", &num);
6        (num > 0) ? printf("%d is Even!", num) :
7        (num < 0) ? printf("%d is Odd!", num) : printf("Number is Zero!", num);
8    }
```

```
OUTPUT    DEBUG CONSOLE    TERMINAL    PORTS

D:\MY ASSIGNMENTS\PF-LAB-ASSIGNMENT\LAB-5>gcc prob6.c -o prob6.exe

D:\MY ASSIGNMENTS\PF-LAB-ASSIGNMENT\LAB-5>prob6.exe
Enter a number: 9
9 is Even!
D:\MY ASSIGNMENTS\PF-LAB-ASSIGNMENT\LAB-5>prob6.exe
Enter a number: -14
-14 is Odd!
D:\MY ASSIGNMENTS\PF-LAB-ASSIGNMENT\LAB-5>prob6.exe
Enter a number: 0
Number is Zero!
D:\MY ASSIGNMENTS\PF-LAB-ASSIGNMENT\LAB-5>
```

PROBLEM-7

```c
C prob7.c > ⍵ main()
  1    #include <stdio.h>
  2    void main() {
  3        int n1, n2;
  4        printf("Enter two numbers: ");
  5        scanf("%d %d", &n1, &n2);
  6        n1 = n1 ^ n2;
  7        n2 = n1 ^ n2;
  8        n1 = n1 ^ n2;
  9        printf("After Swapping:\na = %d\nb = %d", n1, n2);
 10    }
```

```
OUTPUT    DEBUG CONSOLE    TERMINAL    PORTS


D:\MY ASSIGNMENTS\PF-LAB-ASSIGNMENT\LAB-5>gcc prob7.c -o prob7.exe

D:\MY ASSIGNMENTS\PF-LAB-ASSIGNMENT\LAB-5>prob7.exe
Enter two numbers: 129
1402
After Swapping:
a = 1402
b = 129
D:\MY ASSIGNMENTS\PF-LAB-ASSIGNMENT\LAB-5>
```

PROBLEM-9

```c
#include <stdio.h>
void main() {
    int year;
    printf("Enter the Year: ");
    scanf("%d", &year);
    if (year %4 == 0) {
        printf("%d is a Leap Year!", year);
    } else printf("%d is not a Leap Year!", year);
}
```

```
OUTPUT    DEBUG CONSOLE    TERMINAL    PORTS

D:\MY ASSIGNMENTS\PF-LAB-ASSIGNMENT\LAB-5>gcc prob9.c -o prob9.exe

D:\MY ASSIGNMENTS\PF-LAB-ASSIGNMENT\LAB-5>prob9.exe
Enter the Year: 2014
2014 is not a Leap Year!
D:\MY ASSIGNMENTS\PF-LAB-ASSIGNMENT\LAB-5>prob9.exe
Enter the Year: 2024
2024 is a Leap Year!
D:\MY ASSIGNMENTS\PF-LAB-ASSIGNMENT\LAB-5>
```

PROBLEM-11

```c
#include <stdio.h>
void main() {
    int n1, n2, n3;
    printf("Enter three numbers: ");
    scanf("%d %d %d", &n1, &n2, &n3);
    if(n1 > n2) {
        if(n1 > n3) {
            printf("%d is the greatest number!", n1);
        } else if(n3 > n2) {
            printf("%d is the greatest number!", n3);
        }
    } else if(n2 > n3) {
        printf("%d is the greatest number!", n2);
    } else {
        printf("%d is the greatest number!", n3);
    }
}
```

```
OUTPUT    DEBUG CONSOLE    TERMINAL    PORTS

D:\MY ASSIGNMENTS\PF-LAB-ASSIGNMENT\LAB-5>gcc prob11.c -o prob11.exe

D:\MY ASSIGNMENTS\PF-LAB-ASSIGNMENT\LAB-5>prob11.exe
Enter three numbers: 102 1232 392
1232 is the greatest number!
D:\MY ASSIGNMENTS\PF-LAB-ASSIGNMENT\LAB-5>prob11.exe
Enter three numbers: 102 392 1232
1232 is the greatest number!
D:\MY ASSIGNMENTS\PF-LAB-ASSIGNMENT\LAB-5>prob11.exe
Enter three numbers: 1232 102 392
1232 is the greatest number!
D:\MY ASSIGNMENTS\PF-LAB-ASSIGNMENT\LAB-5>
```

PROBLEM-12

```c
C prob12.c > ⊗ main()
1    #include <stdio.h>
2    void main() {
3        int attendance, assignment_scores, exam_results, final_marks;
4        printf("Enter your attendance(in percentage): ");
5        scanf("%d", &attendance);
6        printf("\nEnter your assignment score(out of 100): ");
7        scanf("%d", &assignment_scores);
8        printf("\nEnter your exam results(out of 100): ");
9        scanf("%d", &exam_results);
10       final_marks = assignment_scores * 0.2 + exam_results * 0.8;
11       if(attendance >= 80) {
12           if(final_marks >= 90) {
13               printf("\nFinal Grade: A+");
14           }else if(final_marks >=85) {
15               printf("\nFinal Grade: A");
16           }else if(final_marks >=75) {
17               printf("\nFinal Grade: B");
18           }else if(final_marks >=68) {
19               printf("\nFinal Grade: C");
20           }else if(final_marks >=60) {
21               printf("\nFinal Grade: D");
22           }else if(final_marks >=50) {
23               printf("\nFinal Grade: E");
24           }else {
25               printf("\nFinal Grade: F");
26           }
27       }else {
28           printf("\nFinal Grade: F");
29       }
30   }
```

```
OUTPUT    DEBUG CONSOLE    TERMINAL    PORTS


D:\MY ASSIGNMENTS\PF-LAB-ASSIGNMENT\LAB-5>gcc prob12.c -o prob12.exe

D:\MY ASSIGNMENTS\PF-LAB-ASSIGNMENT\LAB-5>prob12.exe
Enter your attendance(in percentage): 82

Enter your assignment score(out of 100): 68

Enter your exam results(out of 100): 96

Final Grade: A+
D:\MY ASSIGNMENTS\PF-LAB-ASSIGNMENT\LAB-5>prob12.exe
Enter your attendance(in percentage): 79

Enter your assignment score(out of 100): 92

Enter your exam results(out of 100): 97

Final Grade: F
D:\MY ASSIGNMENTS\PF-LAB-ASSIGNMENT\LAB-5>
```

PROBLEM-13

```c
#include <stdio.h>
void main() {
    char original_ch, encrypted_ch, decrypted_ch, key;
    printf("Enter a character to encrypt: ");
    scanf(" %c", &original_ch);
    printf("Enter a key for encryption: ");
    scanf(" %c", &key);
    encrypted_ch = original_ch ^ key;
    decrypted_ch = encrypted_ch ^ key;
    printf("\nOriginal character: %c", original_ch);
    printf("\nEncrypted character: %c (ASCII: %d)", encrypted_ch, encrypted_ch);
    printf("\nDecrypted character: %c", decrypted_ch);
}
```

```
OUTPUT    DEBUG CONSOLE    TERMINAL    PORTS
D:\MY ASSIGNMENTS\PF-LAB-ASSIGNMENT\LAB-5>prob13.exe
Enter a character to encrypt: P
Enter a key for encryption: e

Original character: P
Encrypted character: 5 (ASCII: 53)
Decrypted character: P
D:\MY ASSIGNMENTS\PF-LAB-ASSIGNMENT\LAB-5>prob13.exe
Enter a character to encrypt: H
Enter a key for encryption: A

Original character: H
Encrypted character:      (ASCII: 9)
Decrypted character: H
D:\MY ASSIGNMENTS\PF-LAB-ASSIGNMENT\LAB-5>
```

PROBLEM-14

```c
C prob14.c > ⊕ main()
1    #include <stdio.h>
2    void main() {
3        int age, income, credit_score;
4        printf("Enter your age: ");
5        scanf("%d", &age);
6        printf("\nEnter your income: ");
7        scanf("%d", &income);
8        printf("\nEnter your credit score: ");
9        scanf("%d", &credit_score);
10       if(age >= 18) {
11           if(income <= 70000 && credit_score >= 610) {
12               printf("\nYou are Eligible!");
13           } else {
14               printf("\nYou are not eligible!");
15           }
16       } else {
17           printf("\nYou are not Eligible!");
18       }
19   }
```

```
OUTPUT    DEBUG CONSOLE    TERMINAL    PORTS

Enter your income: 56000

Enter your credit score: 640

You are Eligible!
D:\MY ASSIGNMENTS\PF-LAB-ASSIGNMENT\LAB-5>prob14.exe
Enter your age: 17

Enter your income: 70000

Enter your credit score: 628

You are not Eligible!
D:\MY ASSIGNMENTS\PF-LAB-ASSIGNMENT\LAB-5>
```