ASSIGNMENT

Submitted

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Program1:
Write the program for print all two digit happy number.

```c
#include <stdio.h>


int squareSum(int num) {
    int sum = 0;
    while (num > 0) {
        int digit = num % 10;
        sum += digit * digit;
        num /= 10;
    }
    return sum;
}

int isHappy(int num) {
    while (num != 1 && num != 4) {
        num = squareSum(num);
    }
    return num == 1;
}

int main() {
    printf("Two-digit happy numbers:\n");
    for (int i = 10; i <= 99; ++i) {
        if (isHappy(i)) {
            printf("%d\n", i);
        }
    }

    return 0;
}
```

```
Two-digit happy numbers:
10
13
19
23
28
31
32
44
49
68
70
79
82
86
91
94
97
```

Program2:
Write the program for calculator using elseif and do while.
```c
#include <stdio.h>

int main() {
    char operator;
    double num1, num2, result;

    do {
        printf("Enter an operator (+, -, *, /) or 'q' to quit: ");
        scanf(" %c", &operator);

        if (operator == 'q') {
            printf("Exiting calculator program. Goodbye!\n");
            break;
        }

        printf("Enter two numbers: ");
        scanf("%lf %lf", &num1, &num2);
```

```c
    switch (operator) {
        case '+':
            result = num1 + num2;
            printf("%.2lf + %.2lf = %.2lf\n", num1, num2, result);
            break;
        case '-':
            result = num1 - num2;
            printf("%.2lf - %.2lf = %.2lf\n", num1, num2, result);
            break;
        case '*':
            result = num1 * num2;
            printf("%.2lf * %.2lf = %.2lf\n", num1, num2, result);
            break;
        case '/':
            if (num2 != 0) {
                result = num1 / num2;
                printf("%.2lf / %.2lf = %.2lf\n", num1, num2, result);
            } else {
                printf("Error: Division by zero is undefined.\n");
            }
            break;
        default:
            printf("Error: Invalid operator. Please try again.\n");
    }
} while (1);

return 0;
}
```

```
Enter an operator (+, -, *, /) or 'q' to quit: +
Enter two numbers: 6 7
6.00 + 7.00 = 13.00
Enter an operator (+, -, *, /) or 'q' to quit: *
Enter two numbers: 4   88
4.00 * 88.00 = 352.00
Enter an operator (+, -, *, /) or 'q' to quit:
```