

Homework #3

(C Programming for Beginners - OnLine)

3.1 Here is a listing of a program, which asks a user to enter his/her age. It will print:

- a) "You are a golden" if the entered age is 50 and
- b) "You are not so golden" otherwise.

```
#include <stdio.h>

int main()
{
    int yourAge;

    printf("How old are you?: ");
    scanf("%d", &yourAge);

    if (yourAge == 50)
        printf("You are golden\n");
    else
        printf("You are not so golden\n");
    return 0;
}
```

Modify the above program, so that it will print:

- a) "You are a kid" if the age is less than 13
- b) "You are a teenager" if the age is between 13 and 19
- c) "You are an adult" if greater than 19

3.2 Here is a calculator program. The program gives a prompt and waits for user to enter a number, operator and another number and gives the output like this:

```
Type a number, operator, number --separated by a space: 12 + 34
12.00 + 34.00 = 46.00
```

Another run looks like this:

```
Type a number, operator, number -- separated by a space: 12 * 12
12.00 * 12.00 = 144.00
```

```
#include <stdio.h>

int main()
{
    float firstN;
    float secondN;
    char op;

    // Scanner readInput = new Scanner(System.in);

    printf("Type a number, operator, number -- separated by a space: ");
```

```

scanf("%f %c %f", &firstN, &op, &secondN);

if (op == '+')
    printf("%5.2f + %5.2f = %5.2f",
           firstN, secondN, firstN + secondN);
else if (op == '-')
    printf("%5.2f - %5.2f = %5.2f",
           firstN, secondN, firstN - secondN);
else if (op == '*')
    printf("%5.2f * %5.2f = %5.2f",
           firstN, secondN, firstN * secondN);
else if (op == '/')
    printf("%5.2f / %5.2f = %5.2f",
           firstN, secondN, firstN / secondN);
else if (op == '%')
    printf("%5.2f %% %5.2f = %d",
           firstN, secondN, (int) firstN % (int) secondN);
else
    printf("Unknown operator");
printf("\n\n");

return 0;
}

```

Modify the above program, so that it will:

- a) Accept decimal numbers from the user instead of integers.
- b) Once the output is displayed, ask the user if they want to continue, if they say yes, then repeat the process

3.1 Ternary/conditional operator ?: works like if .. else.

Here is an example, which finds the maximum of two numbers. It shows how can it be written using if else, and ?: both.

```

#include <stdio.h>

int main()
{
    int max, a = 10, b = 20; // get value for a and b from user

    //using if else
    if (a > b) {
        max = a;
    }
    else {
        max = b;
    }

    //using ternary operator
    max = (a > b) ? a : b; // what is the value of max?
    printf("The Max is: %d\n\n", max);

    return 0;
}

```

Re-write the above ternary operator code to find the max of three numbers, for example, a, b, and c

Hint: You need to daisy chain the conditions!