Review: What is the output?

```c
#include <stdio.h>
#include <stdlib.h>

int main()
{
    //Declare variables
    int a = 4, b = 2, c = 5, d = 12, e, f;
    float aaa = 2.0, bbb = 3.0, ccc = 4.0, ddd, eee;

    //Math operations
    ddd = aaa*(b / c);
    eee = d%c;
    e = (aaa*bbb / ccc)*(d / c);
    f = (aaa*a) / b;

    printf(" ddd = %6.2f\n eee = %f\n", ddd, eee);
    printf(" e = %d\n f = %4d\n", e, f);


}
```

Review: What is the output?

```
 ddd =    0.00
 eee = 2.000000
 e  = 3
 f  =    4
Press any key to continue . . .
```

```c
#include <stdio.h>
#include <stdlib.h>

int main()
{
    //Declare variables
    int a = 4, b = 2, c = 5, d = 12, e, f;
    float aaa = 2.0, bbb = 3.0, ccc = 4.0, ddd, eee;

    //Math operations
    ddd = aaa*(b / c);
    eee = d%c;
    e = (aaa*bbb / ccc)*(d / c);
    f = (aaa*a) / b;

    printf(" ddd = %6.2f\n eee = %f\n", ddd, eee);
    printf(" e = %d\n f = %4d\n", e, f);


}
```

Review: What is the output?

```c
#include <stdio.h>
#include <stdlib.h>
#include <math.h>

double my_function(double, int);

void main(void)
{
    double a = 1.1, b = 4.5, Result;
    int c = 3;

    printf("\nIn main, BEFORE the function call, a = %.2lf, b = %.2lf, c = %d\n", a, b, c);

    Result = my_function(b, c);

    printf("\nIn main, AFTER the function call, a = %.2lf, b = %.2lf, c = %d\n", a, b, c);


}

double my_function(double c, int b)
{
    double a = 5;

    printf("\nIn the function, BEFORE calculations, a = %.2lf, b = %d, c = %.2lf\n", a, b, c);

    b = b * 2;
    c = c * 2;
    a = b + c;

    printf("\nIn the function, AFTER calculations, a = %.2lf, b = %d, c = %.2lf\n", a, b, c);

    return(a);
}
```

Review: What is the output?

```
In main, BEFORE the function call, a = 1.10, b = 4.50, c = 3

In the function, BEFORE calculations, a = 5.00, b = 3, c = 4.50

In the function, AFTER calculations, a = 15.00, b = 6, c = 9.00

In main, AFTER the function call, a = 1.10, b = 4.50, c = 3
Press any key to continue . . .
```

```c
#include <stdio.h>
#include <stdlib.h>
#include <math.h>

double my_function(double, int);

void main(void)
{
    double a = 1.1, b = 4.5, Result;
    int c = 3;

    printf("\nIn main, BEFORE the function call, a = %.2lf, b = %.2lf, c = %d\n", a, b, c);

    Result = my_function(b, c);

    printf("\nIn main, AFTER the function call, a = %.2lf, b = %.2lf, c = %d\n", a, b, c);


}

double my_function(double c, int b)
{
    double a = 5;

    printf("\nIn the function, BEFORE calculations, a = %.2lf, b = %d, c = %.2lf\n", a, b, c);

    b = b * 2;
    c = c * 2;
    a = b + c;

    printf("\nIn the function, AFTER calculations, a = %.2lf, b = %d, c = %.2lf\n", a, b, c);

    return(a);
}
```

Review: What is the output?

```
void main(void)
{
    double a = 15, b, c = 8;
    int x = 3, y = 1, i, num;

    for (i = 4; i > 1; i--)
    {

        num = 15 % i;

        switch (num)
        {
        case 1:
            b = a / x;
            printf("b=%7.2lf\n", b);
        case 2:
            y = c / x;
            printf("y=%5d\n", y);
            break;
        case 3:
            b = x / y;
            printf("b=%lf\n", b);
            break;
        default:
            printf("Math practice\n");
        }

    }

    printf("Done!\n");


}
```

Review: What is the output?

```
void main(void)
{
    double a = 15, b, c = 8;
    int x = 3, y = 1, i, num;

    for (i = 4; i > 1; i--)
    {

        num = 15 % i;

        switch (num)
        {
        case 1:
            b = a / x;
            printf("b=%7.2lf\n", b);
        case 2:
            y = c / x;
            printf("y=%5d\n", y);
            break;
        case 3:
            b = x / y;
            printf("b=%lf\n", b);
            break;
        default:
            printf("Math practice\n");
        }

    }

    printf("Done!\n");

}
```

```
b=3.000000
Math practice
b=   5.00
y=    2
Done!
Press any key to continue . . .
```

Review:
What is the output?

```c
#include <stdio.h>
#include <stdlib.h>

void main(void)
{
    int k, a = 8, n = 13;
    printf("Begin");
    for (k = 1; k <= 10; k++)
    {
        if (k == 2 || k == 4)
        {
            a = k * 9;
            printf("\nCondition 1");
            printf("\na = %d", a);
        }
        else if (k < 6 && k >= 4 || k == 8)
        {
            a = k - 7;
            printf("\nCondition 2");
            printf("\na = %d", a);
        }
        else if (k >= 7 && k < 10)
        {
            a = k%n;
            printf("\nCondition 3");
            printf("\na = %d", a);
        }
        else if (k == 5 || k <= 2 || k == 7)
        {
            a = k + 3;
            printf("\nCondition 4");
            printf("\na = %d", a);
        }
        n = n - 1;
    }

    printf("\nn = %d", n);
    printf("\nDone\n");

}
```

Review:
What is the output?

```c
#include <stdio.h>
#include <stdlib.h>

void main(void)
{
    int k, a = 8, n = 13;
    printf("Begin");
    for (k = 1; k <= 10; k++)
    {
        if (k == 2 || k == 4)
        {
            a = k * 9;
            printf("\nCondition 1");
            printf("\na = %d", a);
        }
        else if (k < 6 && k >= 4 || k == 8)
        {
            a = k - 7;
            printf("\nCondition 2");
            printf("\na = %d", a);
        }
        else if (k >= 7 && k < 10)
        {
            a = k%n;
            printf("\nCondition 3");
            printf("\na = %d", a);
        }
        else if (k == 5 || k <= 2 || k == 7)
        {
            a = k + 3;
            printf("\nCondition 4");
            printf("\na = %d", a);
        }
        n = n - 1;
    }

    printf("\nn = %d", n);
    printf("\nDone\n");

}
```

```
Begin
Condition 4
a = 4
Condition 1
a = 18
Condition 1
a = 36
Condition 2
a = -2
Condition 3
a = 0
Condition 2
a = 1
Condition 3
a = 4
n = 3
Done
```

Coding practice

- Part 1:
  - Write a program that will allow the user to manually enter as many x-y data points as they want
  - Write this data to a file

- Part 2:
  - Have your program read the file you just created and print the x-y data to the screen
  - Also print how many points were read

```c
#include <stdio.h>
#include <stdlib.h>
#include <math.h>

void main(void)
{
    //declare variables
    double x, y;
    char doagain = 'y';

    //Create pointer and open file
    FILE *outfile;
    outfile = fopen("MyData.txt", "w");

    //Loop to get input from user
    while (doagain == 'y')
    {
        printf("Enter a number for x and a number for y: ");
        scanf("%lf %lf", &x, &y);

        fprintf(outfile, "%lf %lf\n", x, y);

        printf("Do you want to enter another number (y/n)?  ");
        scanf(" %c", &doagain);
        while (doagain != 'n' && doagain != 'y')
        {
            printf("Do you want to enter another number (y/n)?  ");
            scanf(" %c", &doagain);
        }

    }

    //Close file
    fclose(outfile);
```

```c
    //*************************************************************
    //Part 2

    //Create pointer and variables, and open file
    FILE *infile;
    int status = 2, i=0;

    infile = fopen("MyData.txt", "r");

    //Read data, print to screen
    while (status != EOF && status == 2)
    {
        status = fscanf(infile, "%lf %lf", &x, &y);
        if (status == EOF)
            break;
        printf("%lf %lf\n\n", x, y);
        i = i + 1;
    }

    printf("Total number of pairs read is: %d\n", i);
    printf("Total number of points read is: %d\n\n", i * 2);

    //Close file
    fclose(infile);


}
```

Teaching evaluation surveys

Thank you for being an awesome class!!

Please contact me anytime!

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147 Benedum