Session 5 Solution
Designed by Andrew Kwok-Fai Lui and Maria Poon

All rights reserved. No part of this note may be reproduced, transmitted, or stored in a retrieval system, in any form or by any means, without permission in writing by the author.

Achieve Target 1

```c
#include <stdio.h>

void main() {
    printf("One\n");
    while (1) {
        break;
        printf("Two\n");
        printf("Three\n");
    }
    printf("Four\n");
}
```

The break statement forces the while loop to stop as it just at the beginning. The printf statements in the while body are never executed.

```c
... printf("One\n");
for (;;) {
    break;
    printf("Two\n");
    printf("Three\n");
}
printf("Four\n");
...
```

The above is an equivalent for loop. Note the way how to write a for loop that runs indefinitely.

Achieve Target 1 Cont

```c
... printf("Enter 4 numbers below\n");
while (1) {
    scanf("%f", &data);
    sum = sum + data;
    if (count >= 3)
        break;
    count++;
} printf("Average is %f", sum/4);
...```
Because the condition checking happens before the increment of count, the comparison should be made with 3 instead of 4.

Achieve Target 2

```c
#include <stdio.h>

void main() {
    float data = 0;
    float sum = 0;
    int count = 0;

    printf("Enter 4 numbers below\n");
    while (count < 4) {
        scanf("%f", &data);
        if (data < 0 || data > 100)
            break;
        sum = sum + data;
        count++;
    }
    if (count > 0)
        printf("Average is %f", sum/count);
    getchar();
}
```

Achieve Target 2 Cont

```c
#include <stdio.h>

void main() {
    float data = 0;
    float sum = 0;
    int count = 0;

    printf("Closing HSI Average for One Week\n");
    while (count < 5) {
        switch (count) {
            case 0: printf("Enter Monday HSI: "); break;
            case 1: printf("Enter Tuesday HSI: "); break;
            case 2: printf("Enter Wednesday HSI: "); break;
            case 3: printf("Enter Thursday HSI: "); break;
            case 4: printf("Enter Friday HSI: "); break;
        }
        scanf("%f", &data);
        if (data < 0)
            break;
        sum = sum + data;
        count++;
    }
    if (count > 0)
        printf("Average is %f", sum/count);
    getchar();
}
```

Achieve Target 3

```c
#include <stdio.h>

void main() {
```
while (1) {
    printf("Two\n");
    printf("Three\n");
    continue;
}  
printf("Four\n");

#include <stdio.h>
void main() {
    for (;;) {
        printf("Two\n");
        printf("Three\n");
        continue;
    }
    printf("Four\n");
}

#include <stdio.h>

void main() {
    float data = 0;
    float sum = 0;
    int count = 0;
    printf("Enter 4 positive numbers below (-1 to terminate)\n");
    while (count < 4) {
        scanf("%f", &data);
        if (data == -1)
            break;
        if (data < 0)  {
            printf("Sorry, please enter positive number\n");
            continue;
        }  
        sum = sum + data;
        count++;
    }
    if (count > 0)
        printf("Average is %f", sum/count);
    getchar();
}

#include <stdio.h>

void main() {
    float data = 0;
    float sum = 0;
    int count = 0;
    int holidaycount = 0;
    printf("Closing HSI Average for One Week (Enter -1 if holiday)\n");
    while (count < 5) {

switch (count) {
    case 0: printf("Enter Monday HSI: "); break;
    case 1: printf("Enter Tuesday HSI: "); break;
    case 2: printf("Enter Wednesday HSI: "); break;
    case 3: printf("Enter Thursday HSI: "); break;
    case 4: printf("Enter Friday HSI: "); break;
}
scanf("%f", &data);

if (data == -1) {
    holidaycount++;
    count++;
    continue;
}

sum = sum + data;
count++;
}
if (count - holidaycount > 0)
    printf("Average is %f", sum/(count - holidaycount));
getchar();

Achieve Target 4 Cont

#include <stdio.h>

void main() {
    float data = 0;
    float sum = 0;
    int count;
    int holidaycount = 0;

    printf("Closing HSI Average for One Week (Enter -1 if holiday)\n");
    for (count = 0; count < 5; count++) {
        switch (count) {
            case 0: printf("Enter Monday HSI: "); break;
            case 1: printf("Enter Tuesday HSI: "); break;
            case 2: printf("Enter Wednesday HSI: "); break;
            case 3: printf("Enter Thursday HSI: "); break;
            case 4: printf("Enter Friday HSI: "); break;
        }
        scanf("%f", &data);

        if (data == -1) {
            holidaycount++;
            continue;
        }

        sum = sum + data;
    }
    if (count - holidaycount > 0)
        printf("Average is %f", sum/(count - holidaycount));
    getchar();
}

Note that there is no need to increment the variable count in the bold statements. The for loop structure would execute the update part after the execution of the continue statement.

Achieve Target 5 Cont
```c
#include <stdio.h>

void main() {

    int data = 0;

    printf("Enter an integer below (-1 to finish)\n");
    scanf("%d", &data);

    while (data != -1) {
        if (data % 2 == 0)
            printf("You have entered an even number\n");
        else
            printf("You have entered an odd number\n");
        scanf("%d", &data);
    }

    getchar();
}
```