

## 3.17

```

main.c X
1  #include <stdio.h>
2  #include <stdlib.h>
3
4  int main()
5  {
6      int account;
7      float inbal, totcharge, totcredit, creditlim, bal;
8
9      printf("Enter Account Number (-1 to end): ");
10     scanf("%d", &account);
11
12     while (account>0)
13     {
14         printf("Enter beginning balance: ");
15         scanf("%f", &inbal);
16         printf("Enter total charges: ");
17         scanf("%f", &totcharge);
18         printf("Enter total credits: ");
19         scanf("%f", &totcredit);
20         printf("Enter credit limit: ");
21         scanf("%f", &creditlim);
22
23         bal = inbal + totcharge - totcredit;
24
25         if (bal > creditlim)
26         {
27             printf("\nAccount:      %d", account);
28             printf("\nCredit limit:  %f", creditlim);
29             printf("\nBalance:       %f", bal);
30             printf("\nCredit Limit Exceeded");
31             return 0;
32         }
33         else return 0;
34     }
35     return 0;
36 }
37

```

## 3.18

```

main.c X
1  #include <stdio.h>
2  #include <stdlib.h>
3
4  int main()
5  {
6      float sales, salary;
7
8      printf("Enter sales in dollars (-1 to end): ");
9      scanf("%f", &sales);
10
11     while (sales>0)
12     {
13         salary = 200 + 0.09*sales;
14         printf("Salary is: %f", salary);
15         return 0;
16     }
17     return 0;
18 }
19

```

### 3.19

```
main.c x
1  #include <stdio.h>
2  #include <stdlib.h>
3
4  int main()
5  {
6      float princ, rate, day, interest;
7
8      printf("Enter loan principal (-1 to end): ");
9      scanf("%f", &princ);
10
11     while (princ>0)
12     {
13         printf("Enter interest rate: ");
14         scanf("%f", &rate);
15         printf("Enter term of the loan in days: ");
16         scanf("%f", &day);
17
18         interest = princ * rate * day / 365;
19         printf("The interest charge is $%f", interest);
20         return 0;
21     }
22     return 0;
23 }
24
```

### 3.20

```
main.c x
1  #include <stdio.h>
2  #include <stdlib.h>
3
4  int main()
5  {
6      float hour, rate, salary;
7
8      printf("Enter # of hours worked (-1 to end): ");
9      scanf("%f", &hour);
10
11     while (hour>0)
12     {
13         printf("Enter hourly rate of worker: ");
14         scanf("%f", &rate);
15
16         if (hour>40)
17             salary = rate*hour+(hour-40)*5;
18         else
19             salary = rate*hour;
20
21         printf("Salary is $%f", salary);
22         return 0;
23     }
24     return 0;
25 }
26
```

### 3.33

```
main.c x
1  #include <stdio.h>
2  #include <stdlib.h>
3
4  int main()
5  {
6      char sign = '+';
7      char sign2 = ' ';
8      int i, j;
9
10     for (i = 0; i < 3; i++)
11     {
12         for (j = 0; j < 12; j++)
13         {
14             if ((i == 0) || (i == 2) || (j == 0) || (j == 11))
15                 printf("%c", sign);
16             else
17                 printf("%c", sign2);
18         }
19         printf("\n");
20     }
21 }
22
```

## 4.15

```

main.c x
1  #include <stdio.h>
2  #include <stdlib.h>
3  #include <math.h>
4
5  int main()
6  {
7      float CI, rate;
8
9      for (rate = 10; rate <= 12; rate += 0.5)
10     {
11         CI = 5000* (pow((1 + rate/100), 15));
12         printf("Compound interest with %.1f percent rate is : %.2f\n", rate, CI);
13     }
14 }
15

```

## 4.16

```

main.c x
1  #include <stdio.h>
2  #include <stdlib.h>
3
4  int main()
5  {
6      char sign = '+';
7      char sign2 = '-';
8      int i, j;
9
10     for (i = 0; i < 10; i++)
11     {
12         for (j = 0; j < 10; j++)
13         {
14             if (i >= j)
15                 printf("%c", sign);
16             else
17                 printf("%c", sign2);
18         }
19         printf("\n");
20     }
21     printf("\n");
22
23     for (i = 0; i < 10; i++)
24     {
25         for (j = 0; j < 10; j++)
26         {
27             if (i + j <= 9)
28                 printf("%c", sign);
29             else
30                 printf("%c", sign2);
31         }
32         printf("\n");
33     }
34     printf("\n");
35
36     for (i = 0; i < 10; i++)
37     {
38         for (j = 0; j < 10; j++)
39         {
40             if (i <= j)
41                 printf("%c", sign);
42             else
43                 printf("%c", sign2);
44         }
45         printf("\n");
46     }
47     printf("\n");
48
49     for (i = 0; i < 10; i++)
50     {
51         for (j = 0; j < 10; j++)
52         {
53             if (i + j >= 9)
54                 printf("%c", sign);
55             else
56                 printf("%c", sign2);
57         }
58         printf("\n");
59     }
60 }
61

```

```
main.c x
1  #include <stdio.h>
2  #include <stdlib.h>
3
4  int main()
5  {
6      int x, y, r, dubx, duby, dubr;
7
8      for (r = 0; r < 500; r++)
9      {
10         for (x = 1; x < 500; x++)
11         {
12             for (y = 1; y < 500; y++)
13             {
14                 dubx = x * x;
15                 duby = y * y;
16                 dubr = r * r;
17                 if (dubr == dubx + duby)
18                     printf("%d, %d, %d\n", x, y, r);
19             }
20         }
21     }
22 }
23
```

## 4.28

```

main.c x
1  #include <stdio.h>
2  #include <stdlib.h>
3
4  int main()
5  {
6      int code, week, hour, item;
7      double rate, salary, gross;
8
9      start:
10     printf("Enter paycode\nManager: 1\nHourly worker: 2\nCommission worker: 3\nPiece worker: 4\n");
11     scanf("%d", &code);
12     printf("\n");
13
14     switch(code)
15     {
16         case 1:
17             printf("Enter amount of weeks: ");
18             scanf("%d", &week);
19             salary = 800 * week;
20             if (week < 1)
21                 printf("I apologize, number of weeks do not meet the requirement for a salary");
22             else
23                 printf("Salary is: %.2lf$", salary);
24             break;
25
26         case 2:
27             printf("Enter # of hours worked: ");
28             scanf("%d", &hour);
29             printf("Enter hourly rate of worker: ");
30             scanf("%lf", &rate);
31
32             if (hour > 40)
33                 salary = rate*hour+(hour-40)*5;
34             else
35                 salary = rate*hour;
36
37             printf("Salary is: %.2lf$", salary);
38             break;
39
40         case 3:
41             printf("Enter gross weekly sale: ");
42             scanf("%lf", &gross);
43
44             salary = 250 + gross*(0.057);
45             printf("Salary is: %.2lf$", salary);
46             break;
47
48         case 4:
49             printf("Input amount of items: ");
50             scanf("%d", &item);
51             salary = item * 200;
52             printf("Salary is: %.2lf$", salary);
53             break;
54
55         default:
56             printf("ERROR, inputted integer not within paycode\nPlease try again\n\n");
57             goto start;
58     }
59 }
60
61

```

#### 4.31

```
*main.c X
1  #include <stdio.h>
2  #include <stdlib.h>
3
4  int main()
5  {
6      char sign = '*';
7      char sign2 = ' ';
8      int i, j;
9
10     for (i = 0; i < 9; i++)
11     {
12         for (j = 0; j < 9; j++)
13         {
14             if (i + j <= 3)
15                 printf("%c", sign2);
16             else if (i + j >= 13)
17                 printf("%c", sign2);
18             else if (i + j >= 13)
19                 printf("%c", sign2);
20             else if (i - 2 >= j + 3)
21                 printf("%c", sign2);
22             else if (i + 2 <= j - 3)
23                 printf("%c", sign2);
24             else
25                 printf("%c", sign);
26         }
27         printf("\n");
28     }
29 }
30
```

#### Conclusion:

The usage of for statements are very useful for loops. Loops are usually needed in printing multiple things or calculating something in a looping manner. Switch case statements are useful for making a function that runs according to the inputted data within switch. While statements are also useful in looping, the difference of while and for is that while contains a condition, for contains an, initialization, condition, and iteration.

#### Code:

<https://github.com/AldrichWijaya/Homework>