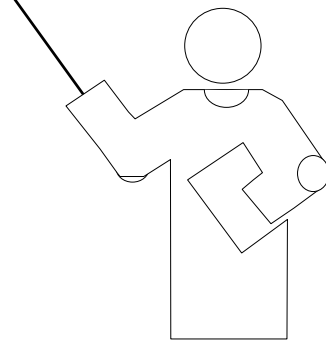


# Software1

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```
#include <stdio.h>

int main(void)
{
    printf("Hello, world!\n");
    return 0;
}
```

Software 1, TAU - 1.1

```

#include <stdio.h>

int main(void)
{
    printf("\n\n\n\n\n\n\n\n\n\n\n");
    printf("          *****\n");
    printf("          *   from sea           *\n");
    printf("          *   to shining C       *\n");
    printf("          *****\n");
    printf("\n\n\n\n\n\n\n\n\n\n\n");
    return 0;
}

```

Software 1, TAU - 1.2

```

/* The distance of a marathon in kilometers. */

#include <stdio.h>

int main(void)
{
    int    miles, yards;
    float  kilometers;

    miles = 26;
    yards = 385;
    kilometers = 1.609 * (miles + yards / 1760.0);
    printf("\nA marathon is %f kilometers.\n\n", kilometers);
    return 0;
}

```

Software 1, TAU - 1.3

```

/* Measuring the Pacific Sea. */

#include "pacific_sea.h"
int main(void)
{
    const int    pacific_sea = AREA;    /* in sq kilometers */
    double       acres, sq_miles, sq_feet, sq_inches;

    printf("\nThe Pacific Sea covers an area");
    printf(" of %d square kilometers.\n", pacific_sea);
    sq_miles = SQ_MILES_PER_SQ_KILOMETER * pacific_sea;
    sq_feet = SQ_FEET_PER_SQ_MILE * sq_miles;
    sq_inches = SQ_INCHES_PER_SQ_FOOT * sq_feet;
    acres = ACRES_PER_SQ_MILE * sq_miles;
    printf("In other units of measure this is:\n\n");
    printf("%22.7e acres\n", acres);
    printf("%22.7e square miles\n", sq_miles);
    printf("%22.7e square feet\n", sq_feet);
    printf("%22.7e square inches\n\n", sq_inches);
    return 0;
}

```

**Software 1, TAU - 1.4**

```

#include <stdio.h>
int main(void)
{
    char    c1, c2, c3;
    int     i;
    float   x;
    double  y;

    printf("\n%s\n%s", "Input three characters,"
           "an int, a float, and a double: ");
    scanf("%c%c%c%d%f%lf", &c1, &c2, &c3, &i, &x, &y);
    printf("\nHere is the data that you typed in:\n");
    printf("%3c%3c%3c%5d%17e%17e\n\n", c1, c2, c3, i, x, y);
    return 0;
}

```

**Software 1, TAU - 1.5**

```

#include <stdio.h>

int main(void)
{
    int    i = 1, sum = 0;

    while (i <= 5) {
        sum += i;
        ++i;
    }
    printf("sum = %d\n", sum);
    return 0;
}

```

Software 1, TAU - 1.6

```

/* Compute the minimum, maximum, sum, and average. */
#include <stdio.h>
#include <stdlib.h>

int main(void)
{
    int    i;
    double x, min, max, sum, avg;

    if (scanf("%lf", &x) != 1) {
        printf("No data found - bye!\n");
        exit(1);
    }
    min = max = sum = avg = x;
    printf("%5s%9s%9s%12s%12s\n%5s%9s%9s%12s%12s\n",
           "Count", "Item", "Min", "Max", "Sum", "Average",
           "-----", "-----", "----", "----", "-----", "-----");
    printf("%5d%9.1f%9.1f%12.3f%12.3f\n",
           1, x, min, max, sum, avg);
    for (i = 2; scanf("%lf", &x) == 1; ++i) {
        if (x < min)
            min = x;
        else if (x > max)
            max = x;
        sum += x;
        avg = sum / i;
        printf("%5d%9.1f%9.1f%12.3f%12.3f\n",
               i, x, min, max, sum, avg);
    }
}

```

Software 1, TAU - 1.7

```

#include <stdio.h>
float  maximum(float x, float y);
float  minimum(float x, float y);
void   prn_info(void);
int main(void)
{
    int    i, n;
    float  max, min, x;

    prn_info();
    printf("Input n:  ");
    scanf("%d", &n);
    printf("\nInput %d real numbers: ",n);
    scanf("%f", &x);
    max = min = x;
    for (i = 2; i <= n; ++i) {
        scanf("%f", &x);
        max = maximum(max, x);
        min = minimum(min, x);
    }
    printf("\n%s%11.3f\n%s%11.3f\n\n",
           "Maximum value:", max,
           "Minimum value:", min);
    return 0;
}

```

**Software 1, TAU - 1.8**

```

float maximum(float x, float y)
{
    if (x > y)
        return x;
    else
        return y;
}

float minimum(float x, float y)
{
    if (x < y)
        return x;
    else
        return y;
}

void prn_info(void)
{
    printf("\n%s\n%s\n\n",
           "This program reads an integer
           value for n, and then",
           "processes n real numbers to
           find max and min values.");
}

```

**Software 1, TAU - 1.9**

```

#include <stdio.h>

int main(void)
{
    int    a = 1;
    void    try_to_change_it(int);

    printf("%d\n", a);    /* 1 is printed */
    try_to_change_it(a);
    printf("%d\n", a);    /* 1 is printed again! */
    return 0;
}

void try_to_change_it(int a)
{
    a = 777;
}

```

**Software 1, TAU -  
1.10**

```

#include <stdio.h>
#define CLASS_SIZE 5
int main(void)
{
    int    i, j, score[CLASS_SIZE], sum = 0, tmp;

    printf("Input %d scores: ", CLASS_SIZE);
    for (i = 0; i < CLASS_SIZE; ++i) {
        scanf("%d", &score[i]);
        sum += score[i];
    }
    for (i = 0; i < CLASS_SIZE - 1; ++i) /* bubble */
        for (j = CLASS_SIZE - 1; j > i; --j)
            if (score[j-1] < score[j]) { /* check */
                tmp = score[j-1];
                score[j-1] = score[j];
                score[j] = tmp;
            }
    printf("\nOrdered scores:\n\n");
    for (i = 0; i < CLASS_SIZE; ++i)
        printf("    score[%d] =%5d\n", i, score[i]);
    printf("\n%18d%s\n%18.1f%s\n\n",
        sum, " is the sum of all the scores",
        (double) sum / CLASS_SIZE, "
        is the class average");
    return 0;
}

```

**Software 1, TAU -  
1.11**

```

/* Have a nice day! */

#include <ctype.h>
#include <stdio.h>

#define MAXSTRING 100

int main(void)
{
    char c, name[MAXSTRING];
    int i, sum = 0;

    printf("\nHi! What is your name? ");
    for (i = 0; (c = getchar()) != '\n'; ++i) {
        name[i] = c;
        if (isalpha(c))
            sum += c;
    }
    name[i] = '\0';
    printf("\n%s%s\n",
        "Nice to meet you ", name, ".",
        "Your name spelled backwards is ");
    for (--i; i >= 0; --i)
        putchar(name[i]);
    printf("\n%s%d\n",
        "and the letters in your name sum to ",
        sum, ".", "Have a nice day!");
    return 0;
}

```

**Software 1, TAU -  
1.12**

```

#include <stdio.h>
#include <string.h>
#define MAXSTRING 100
int main(void)
{
    char c = 'a', *p, s[MAXSTRING];

    p = &c;
    printf("%c%c%c ", *p, *p + 1, *p + 2);
    strcpy(s, "ABC");
    printf("%s %c%c%s\n", s, *s + 6, *s + 7, s + 1);
    strcpy(s, "she sells sea shells by the seashore");
    p = s + 14;
    for ( ; *p != '\0'; ++p) {
        if (*p == 'e')
            *p = 'E';
        if (*p == ' ')
            *p = '\n';
    }
    printf("%s\n", s);
    return 0;
}

```

**Software 1, TAU -  
1.13**

```

/* Count uppercase letters in a file. */
#include <stdio.h>
#include <stdlib.h>

int main(int argc, char *argv[])
{
    int    c, i, letter[26];
    FILE   *ifp, *ofp;

    if (argc != 3) {
        printf("\n%s%s%s\n\n%s\n%s\n\n",
            "Usage: ", argv[0], " infile outfile",
            "The uppercase letters will be counted.",
            "The results will be written in outfile.");
        exit(1);
    }
    ifp = fopen(argv[1], "r");
    ofp = fopen(argv[2], "w");
    for (i = 0; i < 26; ++i)
        letter[i] = 0; /* initialize array to zero */
    while ((c = getc(ifp)) != EOF)

        /* find uppercase letters */

        if (c >= 'A' && c <= 'Z')
            ++letter[c - 'A'];
    for (i = 0; i < 26; ++i) { /* print results */
        if (i % 6 == 0)
            putc('\n', ofp);
        fprintf(ofp, "%c:%5d  ", 'A' + i, letter[i]);
    }
    putc('\n', ofp);
    return 0;
}

```

Software 1, TAU -  
1.14

```

#include <stdio.h>
int main(void)
{
    char    c;

    while (scanf("%c", &c) == 1) {
        printf("%c", c);
        printf("%c", c);
    }
    return 0;
}

```

Software 1, TAU -  
1.15



```
#include <stdio.h>

int main(void)
{
    int    c;

    while ((c = getchar()) != EOF)
        putchar(c);
    return 0;
}
```

Software 1, TAU -  
1.16