计算机程序设计实验二

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1. 《习题汇编》P42 范例1

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| --- | --- |
| #include <stdio.h>  int main(){  char a,b,c,d,e,f;  scanf("%c%c",&a,&b);//a=a，b=b  getchar();c=getchar();d=getchar();//c=d，d=e  printf("%c%c%c%c\n",a,b,c,d); | printf("%c%d\n",a,a);scanf("%c%c",&e,&f);//e=(char)f（值为102），f=LF(换行ASCII值为10)  printf("%6d%6d\n",e,f);  printf("%8d%8d\n",sizeof(a),sizeof(b));//字符型1字节  putchar(a);putchar(c);  return 0;} |
| 输入：abcdef  输出：  abde  a97 | **102 10**  **1 1**  **ad** |

1. **《习题汇编》P46 范例3**

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| --- | --- |
| #include <stdio.h>  #include <stdlib.h>  int main(){ | char c;  while((c=getchar())!=EOF)  putchar(c);return 0;} |
| 输入: 9\_8\_1  输出: 9\_8\_1  输入: B 8S  输出: B 8S | **（getchar会读取最后的回车（ASCII=10）,停止后光标在下一栏**  **读到后面没有了，也就是-1时，停止putchar）** |

1. **《习题汇编》P52 基础训练8 反向输出三位数**

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| --- | --- |
| #include<stdio.h>  int main()  {int a,b,c; | printf("请输入一个三位数：");  a=getchar();b=getchar();c=getchar();  printf("%c%c%c",c,b,a);} |
| 输入:312  输出:213 |  |

1. **《习题汇编》P54 拓展练习1**

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| --- | --- |
| #include<stdio.h>  #include<math.h>  int main()  {float x,y;double n;  printf("请依次输入苹果个数、  减少周期、总时间n x y：");  scanf("%lf%f%f",&n,&x,&y) ; | if(y<=n\*x&&y>0&&n>0&&x>0&&(floor(n+0.5)==n))  {n=n-ceil(y/x);  printf("剩余苹果n=%d\n",(int)n);}  else if (y>n\*x&&y>0&&n>0&&x>0&&(floor(n+0.5)==n))  printf("存在时间盈余，此时苹果数为0\n");  else printf("请输入正确的数据\n");  return 0;} |
| 输入: 6 7 14  输出: 剩余苹果n=4  输入: 1 6 9  输出: 存在时间盈余，此时苹果数为0  输入: 3.1 7 9 | **输出: 请输入正确的数据**  **输入: 3 -7 9**  **输出: 请输入正确的数据**  **（利用floor(n+0.5)==n向下取整来判断n是否为整数利用ceil(y/x)向上取整获取损坏的苹果数量）** |

1. **《指导与实践》P76范例1**

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| --- | --- |
| #include <stdio.h>  main(){  int a,b;char c1,c2;  float d,e;double f,g;  long m,n;unsigned int p,q;  a=61;b=62;c1='a';c2='b';  d=3.56;e=6.78;f=3157.890121;g=0.123456789;  m=50000;n=-60000;p=32768; q=4000;  printf("sizeof:%d, a=%d, b=%d\n",sizeof(int),a,b); | printf("sizeof:%d, c1=%c, c2=%c\n",sizeof(char),c1,c2);  printf("sizeof:%d, d=%-6.2f, e=%-6.2f\n",sizeof(float),d,e);  printf("sizeof:%d, f=%-15.6f, g=%-15.12f\n", sizeof(double),f,g),  printf("sizeof:%d, m=%ld, n=%ld\n",sizeof(long),m,n);  printf("sizeof:%d, p=%u, q=%u\n",sizeof(unsigned),p,q);} |
| 输出：  sizeof:4, a=61, b=62  sizeof:1, c1=a, c2=b  sizeof:4, d=3.56 , e=6.78 | **sizeof:8, f=3157.890121 , g=0.123456789000**  **sizeof:4, m=50000, n=-60000**  **sizeof:4, p=32768, q=4000** |

1. 《指导与实践》P77 习题1

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| --- | --- |
| #include <stdio.h>  main(){  int a,b;char c1,c2;  float d,e;double f,g;  long m,n;unsigned int p,q;  scanf("%d%d%c%c%f%f",&a,&b,&c1,&c2,&d,&e);  scanf("%lf,%lf,%ld,%ld,%u,%u",&f,&g,&m,&n,&p,&q);  printf("sizeof:%d,a=%d,b=%d\n",sizeof(int),a,b); | printf("sizeof:%d,c1=%c,c2=%c\n",sizeof(char),c1,c2);  printf("sizeof:%d,d=%-6.2f,e=%-6.2f\n",sizeof(float),d,e);  printf("sizeof:%d,f=%-15.6f,g=%-15.12f\n",sizeof(double),f,g),  printf("sizeof:%d,m=%ld,n=%ld\n",sizeof(long),m,n);  printf("sizeof:%d,p=%u,q=%u\n",sizeof(unsigned),p,q);} |
| 输入:  61 62ab3.56 -6.78  3157.890121,0.123456789,50000,-60000,32768,4000  输出:  sizeof:4,a=61,b=62 | **sizeof:1,c1=a,c2=b**  **sizeof:4,d=3.56 ,e=-6.78**  **sizeof:8,f=3157.890121 ,g=0.123456789000**  **sizeof:4,m=50000,n=-60000**  **sizeof:4,p=32768,q=4000**  **（注意指定的scanf中逗号的格式）** |

1. 《指导与实践》P77 6(1) 计算球体体积

|  |  |
| --- | --- |
| #include<stdio.h>  #include<math.h>  #define PI 3.14159265358979  int main() | {float R,V;  printf("请输入球半径R：");scanf("%f",&R);  if (R>0) {V=4.0/3\*R\*R\*R\*PI; printf("V=%-f",V);}  else printf("\n请输入正确的半径"); } |
| 输入：3  输出：V=113.097336 | **输入：-5**  **输出：请输入正确的半径** |

1. 《指导与实践》P77 6(3)

|  |  |
| --- | --- |
| #include<stdio.h>  int main()  {double x; | x=(3.31e+18+2.10e-7)/(7.16e5+2.01e+3) ;  printf("x=%f",x);  return 0;} |
| 输出：x=4609963649531.343700 |  |

1. 《指导与实践》P77 7

|  |  |
| --- | --- |
| #include<stdio.h>  int main()  {char abc ;  printf("输入小写字母"); | abc=getchar();  abc=abc+'A'-'a';  putchar(abc);  return 0;} |
| 输入：s  输出：S | **输入：a**  **输出：A** |

1. 《指导与实践》P77 8

|  |  |
| --- | --- |
| #include<stdio.h>  #include<math.h>  #define PI 3.14159265358979  int main(){float R,H,V,C,S1,S2,M;  printf("请输入圆锥半径R=");scanf("%f",&R);  printf("请输入圆锥的高H=");scanf("%f",&H);  if (R>0&&H>0) | {V=1.0/3\*PI\*R\*R\*H; C=2\*PI\*R;  S1=PI\*R\*R;M=sqrt(H\*H+R\*R);  S2=M\*C/2;  printf("体积V=%-.2f\n底面周长C=%-.2f\n底面积S1=%-.2f\n侧面积S2=%-.2f",V,C,S1,S2);}  else printf("\n请输入正确的圆柱体参数");  return 0;} |
| 输入：R=38 H=43  输出：  体积V=65022.59  底面周长C=238.76  底面积S1=4536.46  侧面积S2=6850.61 | **输入：R=-2 H=3**  **输出：请输入正确的圆柱体参数** |