

CP 111 Computer Programming

2/2554 Section B01/B02

Lab 4 solution

1. Problem name: Which_area_abs_x_y

```
#include <stdio.h>

int main()
{
    int x,y,abs_x,abs_y;

    scanf("%d %d", &x, &y);
    if(x<0)
        abs_x=-x;
    else
        abs_x=x;

    /* Do the same as above for abs_y */
    if(y<0)
        abs_y=-y;
    else
        abs_y=y;

    if(abs_x==abs_y)
    {
        printf("E\n");
    }
    else if(abs_x>abs_y)
    {
        if(x>0)
            printf("A\n");
        else
            printf("C\n");
    }
    else
    {
        if(y>0)
            printf("B\n");
        else
            printf("C\n");
    }

    return 0;
}
```

2. Problem name: Deposit_interest_loop_2

```
#include <stdio.h>
int main()
{
    double deposit,i_rate,total,target;
    int N;

    scanf("%lf %lf %lf",&deposit,&i_rate,&target);

    N=0;
    total=deposit;
    while(total<target)
    {
        total=total+(i_rate/100)*total;
        N=N+1;
    }
    printf("%d\n",N);
    printf("%.2f\n",total);

    return 0;
}
```

3. Problem name: Fibonacci

```
#include <stdio.h>
int main()
{
    int i,f_n_1,f_n_2,f_n,n;

    scanf("%d",&n);

    if(n==0)
        f_n=0;
    else if(n==1)
        f_n=1;
    else{
        f_n_1=1;
        f_n_2=0;
        for(i=2;i<=n;i++)
        {
            f_n=f_n_1+f_n_2;
            f_n_2=f_n_1;
            f_n_1=f_n;
        }
    }
    printf("%d\n",f_n);
    return 0;
}
```

4. Problem name: Dropped_ball_2

```
#include <stdio.h>

int main()
{
    int n_hits;
    double h;
    double sum_d;

    scanf("%lf",&h);
    /* the first hit */
    sum_d=h;
    n_hits=1;
    h=(2.0/5.0)*h;
    while(h>1.0) {
        n_hits++;
        sum_d=sum_d+(2*h);
        h=(2.0/5.0)*h;
    }
    /* the last hit */
    sum_d=sum_d+(2*h);
    n_hits++;
    printf("%d\n",n_hits);
    printf("%.2f\n",sum_d);
    return 0;
}
```

5. Problem name: Numeric_Triangle

```
#include <stdio.h>
int main()
{
    int N,i,j,x;

    scanf("%d",&N);
    x=1;
    for(i=1;i<=N;i++)
    {
        for(j=1;j<=i;j++)
        {
            printf("%d\t",x);
            x=x+1;
        }
        printf("\n");
    }
    return 0;
}
```