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PF Lab Assignment

Lab 09

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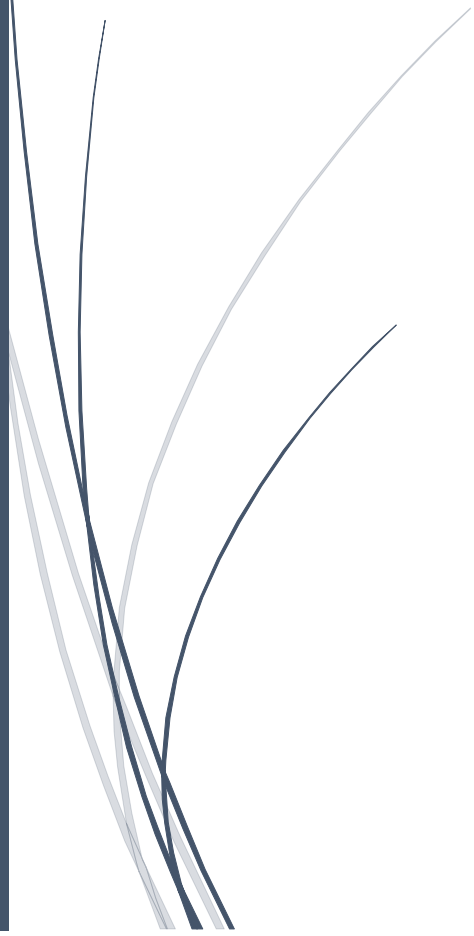

TASK 01

Write a function that computes the time one must leave in order to reach a certain destination by a designated time. You need to deal only with arrivals occurring later in the same day as the departure.

PROGRAM & OUTPUT

```c
#include<stdio.h>
#include<math.h>
void function(int time,float dis,float speed)
{
    float deptime;
    deptime=dis/speed;
    printf("%.1f",round(deptime));
    int rqtime=round(deptime)+time;
    printf("\nTime Required is %d ",rqtime);
}
int main()
{
    int time,dis,speed;
    printf("Enter time:");
    scanf("%d",&time);
    printf("\nEnter Distance:");
    scanf("%d",&dis);
    printf("\nEnter Speed:");
    scanf("%d",&speed);
     function(time,dis,speed);

}
```

```
Enter time:2030

Enter Distance:700

Enter Speed:110
6.0
You need to Leave at 2036
--------------------------------
```

TASK 02

You have saved $500 to use as a down payment on a car. Before beginning your car shopping, you decide to write a program to help you figure out what your monthly payment will be, given the car's purchase price…….. a dollar sign and two decimal places.

PROGRAM & OUTPUT

```c
#include<stdio.h>
void function(int i,int n,int p)
{
    int payment;
    payment=i*p/1-(1+i)-n;
    printf("\nMonthly Payment %d$",payment);
    printf("\nAmmount Borrowed %d$",p);
}
int main()
{
    int purchsed_price,down_payment,i,n,p;
    printf("Enter Purchased price:");
    scanf("%d",&purchsed_price);
    printf("Enter Down Payment:");
    scanf("%d",&down_payment);
    printf("Enter Annual Interest Rate:");
    scanf("%d",&i);
    printf("Enter Number of Payments:");
    scanf("%d",&n);
    printf("Enter Borrowed Amount:");
    scanf("%d",&p);
    function(i,n,p);
}
```

```
Enter Purchased price:500
Enter Down Payment:500
Enter Annual Interest Rate:56
Enter Number of Payments:38
Enter Borrowed Amount:750

Monthly Payment 41905$
Ammount Borrowed 750$
--------------------------------
```

TASK 03

Write a function that takes a positive number with a fractional part and rounds it to two decimal places. For example, 32.4851 would round to 32.49, and 32.4431 would round to 32.44.

PROGRAM & OUTPUT

```c
#include<stdio.h>
int main()
{
    int stop;
    char r[10];
    char num[10];
    int count=0;
    int i;
    printf("Enter Number: ");
    fgets(num,sizeof(num),stdin);
    int d=strlen(num);
    //printf("%d",d);
    for (i=0;i<d-1;i++)
    {
        printf("%c",num[i]);
        if(num[i]=='.')
        {
            stop=i;
            break;
        }
    }
    for(i=d-2;i>stop+2;i--)
    {
        if (num[i]>='5')
        {
            //printf("True");
            num[i-1]=num[i-1]+1;
        }
        else if(num[i]=='.')
        {
            break;
        }
    }
    for(i=stop+1;i<d-2;i++)
    {
        printf("%c",num[i]);
    }
}
```

```
Enter Number: 42.667
42.67
--------------------------------
```

TASK 04

Write and test a function deblank that takes a string output and a string input argument and returns a copy of the input argument with all blanks removed.

PROGRAM & OUTPUT

```c
#include<stdio.h>
void deblank(char a[0])
{

    int i,j,k, temp;
    for(i=0;i<15;i++)
    {
        for(j=i+1;j<15;j++)
        {
            if(a[i]==' ')
                {
                    temp=a[j];
                    a[j]=a[i];
                    a[i]=temp;
                }
        }
    }
    for(k=0;k<15;k++)
    {
        printf("%c", a[k]);
    }
}


int main()
{
    char a[15];
    printf("Enter String:");
    fgets(a,sizeof(a),stdin);
    deblank(a);

}
```

```
Enter String:ab nh ty fg
abnhtyfg

--------------------------------
```

TASK 05

Write and test a function hydroxide that returns a 1 for true if its string argument ends in the substring OH .
Try the function hydroxide on the following data:
KOH H2O2 NaCl NaOH C9H8O4 MgOH

PROGRAM & OUTPUT

```c
#include<stdio.h>

void ans(char form[],int d)
{
        if(form[d-2]=='H'&&form[d-3]=='O')
    {
        printf("1");
    }
}

int main()
{
    char form[6];
    printf("Enter Formula;");
    fgets(form,sizeof(form),stdin);
    //printf("%s",form);
    int d=strlen(form);
    //printf("%d",d);
    //printf("%c",form[d-2]);
    ans(&form[0],d);
}
```

```
Enter Formula: KOH
1
--------------------------------
```

```
Enter Formula: H20

--------------------------------
```

TASK 06

Write a program that takes nouns and forms their plurals on the basis of these rules:

a. If noun ends in “y”, remove the “y” and add “ies”.
b. If noun ends in “s”, “ch”, or “sh”, add “es”.
c. In all other cases, just add “s”.

PROGRAM & OUTPUT

```c
#include<stdio.h>
int main()
{
    char form[20];
    printf("Enter string;");
    fgets(form,sizeof(form),stdin);
    //printf("%s",form);
    int d=strlen(form);
    //printf("%d",d);
    //printf("%c",form[d-2]);
    if((form[d-2]=='Y')||(form[d-2]=='y'))
    {

        for (int i=0;i<d-2;i++)
        {
            printf("%c",form[i]);
        }
        printf("ies");
    }
    else if ((form[d-2]=='s')||(form[d-2]=='ch')||(form[d-2]=='sh'))
    {
        for (int i=0;i<d-2;i++)
        {
            printf("%c",form[i]);
        }
        printf("es");
    }
    else
    {
        for (int i=0;i<d-2;i++)
        {
            printf("%c",form[i]);
        }
        printf("s");

    }
}
```

```
Enter string;diary
diaries
--------------------------------
```

TASK 07

Write a program that takes data a line at a time and reverses the words of the line. For example,
Input: birds and bees
Reversed: bees and birds

PROGRAM & OUTPUT

```c
#include<stdio.h>
#include<string.h>
int main()
{
    int start,end,i;
    char a[50];
    printf("Enter Line:");
    fgets(a,sizeof(a),stdin);
    int d=strlen(a);
    //printf("%d",d);
    for (i=0;i<d-1;i++)
    {
        if (a[i]==' ')
        start=i;
    }
    for (i=start;i<d;i++)
    {
        if (a[i]==' ')
        end=i;
    }
    for (i=end+1;i<d-1;i++)
    {
        printf("%c",a[i]);
    }
    printf(" and ");

    for (int j=0;j<start-3;j++)
    {
        printf("%c",a[j]);
    }
}
```

```
Enter Line:bees and birds
birds and bees
--------------------------------
```

TASK 08

Students are grouped in two to complete a lab task. Each student is required to enter a string of their own choice as an input to the program. The program will then display as a result whether both the strings are equal. If the strings are not equal, the program will display which of the string is greater.

PROGRAM & OUTPUT

```c
#include<stdio.h>
#include<string.h>
int main()
{
    int sum1=0,sum2=0,i;
    char s1[20];
    char s2[20];
    printf("Enter String 1:");
    fgets(s1,sizeof(s1),stdin);
    int d1=strlen(s1);
    printf("Enter String 2:");
    fgets(s2,sizeof(s2),stdin);
    int d2=strlen(s2);
    for (i=0;i<d1-1;i++)
    {
        sum1=sum1+s1[i];
    }
    for (i=0;i<d2-1;i++)
    {
        sum2=sum2+s2[i];
    }
    if (sum1==sum2)
    {
        printf("Strings are Equal.");
    }
    else if (sum1>sum2)
    {
        printf("Strings are not Equal.");
        printf("\nString1 is Greater.");
    }
    else if(sum1<sum2)
    {
        printf("Strings are not Equal.");
        printf("\nString2 is Greater.");
    }
}
```

```
Enter String 1:ABCDEFG
Enter String 2:ABCDEFG
Strings are Equal.
--------------------------------
```

```
Enter String 1:ABCGTH
Enter String 2:ABDFUI
Strings are not Equal.
String2 is Greater.
--------------------------------
```