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MCS-011

Assignment

Ques 1 :- Write a C program to find out perfect numbers from 1 and 50.

```
Ans :- #include<stdio.h>
#include<conio.h>
void main()
{
void perfect();
clrscr();
perfect();
getch();
}
void perfect()
{
int n,i,s,lim;
lim=1;
while(lim<=50)
{
i=1;s=0;
while(i<lim)
{
if(lim%i==0)
{
s=s+i;
}
}
i++;
}
if(s==lim)
printf("perfect no =%d\n",lim);
```

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```
lim++;  
}  
  
}
```

Ques2 :- Write an algorithm, draw a corresponding flowchart and write an

interactive program to convert a binary number to its octal equivalent.

Ans :- c program to convert binary to octal

```
#include<stdio.h>  
int main(){  
  
    long int binaryNumber,octalNumber=0,j=1,remainder;  
  
    printf("Enter any number any binary number: ");  
    scanf("%ld",&binaryNumber);  
  
    while(binaryNumber!=0){  
        remainder=binaryNumber%10;  
        octalNumber=octalNumber+remainder*j;  
        j=j*2;  
        binaryNumber=binaryNumber/10;  
    }  
  
    printf("Equivalent octal value: %lo",octalNumber);  
  
    return 0;  
}
```

Ques3 :- Write the function *strreplace(s, chr, repl_chr)* which will replace each occurrences of character *chr* with the character *repl_chr* in the string *s*. The function returns the number of replacements. Place the source code of this function in a file named *strreplace.c*

Ans :- char *replace_str(const char *str, const char *old, const char *new)

```
{
```

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```
char *ret, *r;
const char *p, *q;
size_t oldlen = strlen(old);
size_t count, retlen, newlen = strlen(new);

if (oldlen != newlen) {
    for (count = 0, p = str; (q = strstr(p, old)) != NULL; p = q + oldlen)
        count++;
    /* this is undefined if p - str > PTRDIFF_MAX */

    retlen = p - str + strlen(p) + count * (newlen - oldlen);
} else
    retlen = strlen(str);

if ((ret = malloc(retlen + 1)) == NULL)
    return NULL;

for (r = ret, p = str; (q = strstr(p, old)) != NULL; p = q + oldlen) {
    /* this is undefined if q - p > PTRDIFF_MAX */
    ptrdiff_t l = q - p;
    memcpy(r, p, l);
    r += l;
    memcpy(r, new, newlen);
    r += newlen;
}
strcpy(r, p);

return ret;
}
```

Ques4 :- Write an interactive C program to check whether the given string is a palindrome or not, *using pointers*.

```
Ans :- #include<stdio.h>
#include<conio.h>
int main()
{
```

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```
char str[30];
char *p,*t;
printf("Enter any string : ");
gets(str);
for(p=str ; *p!=NULL ; p++);
for(t=str, p-- ; p>=t; )
{
    if(*p==*t)
    {
        p--;
        t++;
    }
    else
        break;
}
if(t>p)
    printf("\nString is palindrome");
else
    printf("\nString is Not palindrome");
getch();
return 0;
}
```

Ques5 :- Write an interactive program called "WEIGHT CONVERTER" that accepts the weight in milligrams / decigrams / centigrams / kilograms / ounces / pounds / tons and displays its equivalent in grams.

Ans :- #include <stdio.h>

```
void print_converted(int pounds)
```

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```
/* Convert U.S. Weight to Imperial and International
```

```
Units. Print the results */
```

```
{    int stones = pounds / 14;

    int uklbs = pounds % 14;

    float kilos_per_pound = 0.45359;

    float kilos = pounds * kilos_per_pound;

    printf(" %3d    %2d %2d    %6.2f",

           pounds, stones, uklbs, kilos);

}
```

```
main(int argc,char *argv[])
```

```
{    int pounds;

    if(argc != 2)

    {    printf("Usage: convert weight_in_pounds");

        exit(1);

    }
```

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```
sscanf(argv[1], "%d", &pounds); /* Convert String to int */
```

```
printf(" US lbs    UK st. lbs    INT Kg");
```

```
print_converted(pounds);
```

```
}
```

Ques6 :- Write an interactive program to generate pay slips for the staff of size 12 employees (2 members are clerks, one computer operator, 6 salesmen, 3 helpers) , working in a small chemist retail shop.

Assumptions can be made wherever necessary. The payslip should display the employee no., employee name, no. of days worked during the month, date of generation of the payslip, month for which the salary is being paid, all the details of the payment, deductions, gross-pay and net-pay.

Ans :- #include<stdio.h>

```
#include<conio.h>
```

```
Struct date
```

```
{
```

```
Int dt;
```

```
Int month;
```

```
Int year;
```

```
};
```

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```
Struct employee
```

```
{
```

```
Int empno;
```

```
Char empname[20];
```

```
Int no_days;
```

```
Struct date d;
```

```
Float basic;
```

```
Float hra;
```

```
Float da;
```

```
Int incentive;
```

```
};
```

```
Void main()
```

```
{
```

```
Struct employee e[12];
```

```
Int i;
```

```
Float net_sal;
```

```
Clrscr();
```

```
Printf("Enter the details of employee %d",i+1);
```

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```
For(i=0;i<=11;i++)  
{  
    Printf("Enter employee no.");  
    Scanf("%d",&e[i].empno);  
    Printf("Enter employee name");  
    Scanf("%s",e[i].empname);  
    Printf("Enter no. of days worked");  
    Scanf("%d",&e[i].no_days);  
    Printf("Enter the date of paying salary");  
    Scanf("%d %d %d",&e[i].d.dt,&e[i].d.month,&e[i].d.year);  
    Printf("Enter the basic salary");  
  
    Scanf("%f",&e[i].basic);  
    Printf("Enter hra");  
    Scanf("%f",&e[i].hra);  
    printf("Enter the da");  
    scanf"%f",&e[i].da);  
    printf("Enter the incentive")  
    scanf("%d",&e[i].incentive);  
}
```


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```
Printf("\n\n PAYMENT SLIP ");
For(i=0;i<=11;i++)
{
printf("\n PAYMENT SLIP FOR EMPLOYEE %D",i+1);
printf("\nEmployee No. : %d",e[i].empno);
printf("\nEmployee Name : %s",e[i].empname);
printf("\n No of days worked : %d",e[i].no_days);
printf("\nBasic Salary : %f",e[i].basic);
printf("\nHRA : %f",e[i].hra);
printf("\nDA : %f",e[i].da);
printf("\nIncentive : %d",e[i].incentive);
net_sal=e[i].basic-e[i].hra-e[i].da+e[i].incentive;
printf("\nNet Salary : %f",net_sal);

printf("\nDate : %d %d %d ",e[i].d.dt,e[i].d.month,e[i].d.year);

}
getch();
}
```