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Assignment No 5 Type 1

```
#include <stdio.h>
#include <math.h>
void ffromc();
void aeraandparameter();
void reverse();
void evenodd();
void calculatebasic();
void eligible();
void discount();
void greater();
void choicceopp();
void displaychoice();
void studentornot();
void printnumber();
void printtable();
void calculatesumofnumber();
void checkprimeornot();
void checkarmstrong();
void checkperfect();
void factorial();
void checkpalindrome();
void firstdigit();
void rangearmstrong();
```

```
void rangeprime();
void rangepoerfect();

int main() {
    ffromc();
    aeraandparameter();
    reverse();
    evenodd();
    calculatebasic();
    eligible();
    discount();
    greater();
    choicceopp();
    displaychoice();
    studentornot();
    printnumber();
    printtable();
    calculatesumofnumber();
    checkprimeornot();
    checkarmstrong();
    checkperfect();
    factorial();
    checkpalindrome();
    firstdigit();
    rangearmstrong();
    rangeprime();
```

```
    rangepoerfect();
    return 0;
}


void ffromc() {
    int f = 12;
    int c = (f - 32) * 5 / 9;
    printf("%d is temperature\n", c);
}

void aeraandparameter() {
    int length, width;
    float radius;
    double area, perimeter, circle_area, circle_perimeter;
    const double PI = 3.1416;

    printf("Enter length: ");
    scanf("%d", &length);
    printf("Enter width: ");
    scanf("%d", &width);
    area = length * width;
    printf("Area of rectangle = %.2f\n", area);
    perimeter = 2 * (length + width);
    printf("Perimeter of rectangle = %.2f\n", perimeter);

    printf("Calculate area and perimeter of circle\n");
```

```
    printf("Enter value of radius: ");
    scanf("%f", &radius);
    circle_area = PI * radius * radius;
    printf("Area of circle = %.2f\n", circle_area);
    circle_perimeter = 2 * PI * radius;
    printf("Perimeter of circle = %.2f\n", circle_perimeter);
}

void reverse() {
    int number;
    printf("Enter three-digit number: ");
    scanf("%d", &number);

    int rem1 = number % 10;
    number = number / 10;
    int rem2 = number % 10;
    number = number / 10;
    int rem3 = number % 10;

    int sum = rem1 + rem2 + rem3;
    printf("Sum of digits: %d\n", sum);
    printf("Reverse number: %d%d%d\n", rem1, rem2, rem3);
}

void evenodd() {
    int number;
```

```
    printf("Enter number: ");
    scanf("%d", &number);

    if (number % 2 == 0) {
        printf("%d is even\n", number);
    } else {
        printf("%d is odd\n", number);
    }
}

void calculatebasic() {
    int basic;
    printf("Enter basic salary: ");
    scanf("%d", &basic);

    double da, ta, hra, totalsalary;

    if (basic <= 5000) {
        da = 0.10 * basic;
        ta = 0.15 * basic;
        hra = 0.25 * basic;
    } else {
        da = 0.15 * basic;
        ta = 0.25 * basic;
        hra = 0.30 * basic;
    }
```

```
    totalsalary = basic + ta + da + hra;
    printf("Total salary is = %.2lf\n", totalsalary);
}

void eligible() {
    int age;
    char gender;
    printf("Enter age: ");
    scanf("%d", &age);
    printf("Enter gender (M/F): ");
    scanf(" %c", &gender);

    if ((gender == 'M' && age >= 21) || (gender == 'F' && age >= 18)) {
        printf("Eligible for marriage\n");
    } else {
        printf("Not eligible for marriage\n");
    }
}

void discount() {
    float price;
    printf("Enter item price: ");
    scanf("%f", &price);

    double discount = 0;
    if (price < 1000) {
```

```
        discount = 0.10;
    } else if (price >= 1000 && price <= 5000) {
        discount = 0.20;
    } else {
        discount = 0.30;
    }
    double final = price - (price * discount);
    printf("Final price after discount: %.2f\n", final);
}

void greater() {
    int a, b, c;
    printf("Enter three numbers: ");
    scanf("%d %d %d", &a, &b, &c);

    if (a >= b && a >= c) {
        printf("%d is the greatest\n", a);
    } else if (b >= c) {
        printf("%d is the greatest\n", b);
    } else {
        printf("%d is the greatest\n", c);
    }
}

void choicceopp() {
    int a, b;
```

```
    char op;
    printf("Enter two numbers: ");
    scanf("%d %d", &a, &b);
    printf("Choose operator (+, -, *, /): ");
    scanf(" %c", &op);

    if (op == '+') {
        printf("Result: %d\n", a + b);
    } else if (op == '-') {
        printf("Result: %d\n", a - b);
    } else if (op == '*') {
        printf("Result: %d\n", a * b);
    } else if (op == '/') {
        if (b != 0) {
            printf("Result: %d\n", a / b);
        } else {
            printf("Error: Division by zero.\n");
        }
    } else {
        printf("Invalid operator.\n");
    }
}

void displaychoice() {
    int ch;
    printf("Enter your choice (1 for even/odd, 2 for basic salary calculation): ");
```

```
    scanf("%d", &ch);

    if (ch == 1) {
        int no;
        printf("Enter number: ");
        scanf("%d", &no);
        if (no % 2 == 0) {
            printf("%d is even\n", no);
        } else {
            printf("%d is odd\n", no);
        }
    } else if (ch == 2) {
        calculatebasic();
    } else {
        printf("Invalid choice.\n");
    }
}

void studentornot() {
    char ch;
    printf("Are you a student? (y/n): ");
    scanf(" %c", &ch);

    int price;
    printf("Enter price of item: ");
    scanf("%d", &price);
```

```
    double discount = (ch == 'y') ? (price > 500 ? 0.20 : 0.10) : (price > 600 ? 0.15 : 0.00);
    double final = price - (price * discount);
    printf("Final price after discount: %.2f\n", final);
}

void printnumber() {
    for (int i = 1; i <= 10; i++) {
        printf("%d\n", i);
    }
}

void printtable() {
    int num;
    printf("Enter number: ");
    scanf("%d", &num);
    for (int i = 1; i <= 10; i++) {
        printf("%d x %d = %d\n", num, i, num * i);
    }
}

void calculatesumofnumber() {
    int start, end, sum = 0;
    printf("Enter start number: ");
    scanf("%d", &start);
```

```
    printf("Enter end number: ");
    scanf("%d", &end);

    for (int i = start; i <= end; i++) {
        sum += i;
    }
    printf("Sum = %d\n", sum);
}

void checkprimeornot() {
    int num, isPrime = 1;
    printf("Enter a number: ");
    scanf("%d", &num);

    if (num <= 1) {
        isPrime = 0;
    } else {
        for (int i = 2; i <= sqrt(num); i++) {
            if (num % i == 0) {
                isPrime = 0;
                break;
            }
        }
    }
    printf("%d is %s prime number.\n", num, isPrime ? "a" : "not a");
}
```

```
void checkarmstrong() {
    int num, temp, remainder, result = 0, n = 0;
    printf("Enter a number: ");
    scanf("%d", &num);

    temp = num;
    while (temp != 0) {
        temp /= 10;
        ++n;
    }

    temp = num;
    while (temp != 0) {
        remainder = temp % 10;
        result += pow(remainder, n);
        temp /= 10;
    }

    if (result == num) {
        printf("%d is an Armstrong number.\n", num);
    } else {
        printf("%d is not an Armstrong number.\n", num);
    }
}
```

```
void checkperfect() {
    int num, sum = 0;
    printf("Enter a number: ");
    scanf("%d", &num);

    for (int i = 1; i < num; i++) {
        if (num % i == 0) {
            sum += i;
        }
    }
    if (sum == num) {
        printf("%d is a perfect number.\n", num);
    } else {
        printf("%d is not a perfect number.\n", num);
    }
}

void factorial() {
    int num, fact = 1;
    printf("Enter a number: ");
    scanf("%d", &num);

    for (int i = 1; i <= num; i++) {
        fact *= i;
    }
    printf("Factorial of %d is %d\n", num, fact);
```

```
}

void checkpalindrome() {
    int num, original, reversed = 0, remainder;
    printf("Enter a number: ");
    scanf("%d", &num);

    original = num;
    while (num != 0) {
        remainder = num % 10;
        reversed = reversed * 10 + remainder;
        num /= 10;
    }

    if (original == reversed) {
        printf("%d is a palindrome.\n", original);
    } else {
        printf("%d is not a palindrome.\n", original);
    }
}

void firstdigit() {
    int num;
    printf("Enter number: ");
    scanf("%d", &num);
```

```
    int first = num;
    while (first >= 10) {
        first /= 10;
    }
    int last = num % 10;
    printf("First digit: %d, Last digit: %d, Sum: %d\n", first, last, first + last);
}

void rangearmstrong() {
    for (int num = 1; num <= 160; num++) {
        int sum = 0, temp = num, digits = 0;
        while (temp) {
            temp /= 10;
            digits++;
        }
        temp = num;
        while (temp) {
            sum += pow(temp % 10, digits);
            temp /= 10;
        }
        if (sum == num) {
            printf("%d\n", num);
        }
    }
}
```

```
void rangeprime() {
    int start, end;
    printf("Enter range (start and end): ");
    scanf("%d %d", &start, &end);

    for (int num = start; num <= end; num++) {
        int isPrime = 1;
        if (num < 2) continue;
        for (int i = 2; i <= sqrt(num); i++) {
            if (num % i == 0) {
                isPrime = 0;
                break;
            }
        }
        if (isPrime) {
            printf("%d\n", num);
        }
    }
}

void rangepoerfect() {
    int start, end;
    printf("Enter range (start and end): ");
    scanf("%d %d", &start, &end);

    for (int num = start; num <= end; num++) {
```

```
        int sum = 0;
        for (int i = 1; i < num; i++) {
            if (num % i == 0) {
                sum += i;
            }
        }
        if (sum == num) {
            printf("%d\n", num);
        }
    }
}
```

Assingment No 5 Type 2

```
#include<stdio.h>

int    ffromc();
int   reverse();
int evenodd();
double calculatebasic();
int eligible();
double student();
int  calculation();
int fectorial();
int checkarmstrong();
int checkperfect();
int checkpalindrome();
int digit();


int main(){
    int res = ffromc();
    printf("%d\n", res);

    int ret = reverse();
    printf("%d\n", ret);

    int check = evenodd();
    if(check){
```

```
    printf("even\n");
}
else{
    printf("odd\n");
}

double totalsalaryy = calculatebasic();
printf("Total salary: %.2lf\n", totalsalaryy);

int permission = eligible();
if(permission){
    printf("eligible\n");
}
else{
    printf("not eligible\n");
}

double fina = student();
printf("Final price is %.2lf\n", fina);

int calculationn = calculation();
printf("%d\n", calculationn);

int factorial = fectorial();
printf("%d\n", factorial);
```

```
    int armstrong = checkarmstrong();
    if(armstrong){
        printf("yes, number is armstrong\n");
    }
    else {
        printf("no, number is not armstrong\n");
    }

    int perfect = checkperfect();
    if(perfect){
        printf("yes, number is perfect\n");
    }
    else{
        printf("no, number is not perfect\n");
    }

    int palindrome = checkpalindrome();
    if(palindrome)
        printf("yes, number is palindrome\n");
    else
        printf("no, number is not palindrome\n");

    int digitt = digit();
    printf("%d\n", digitt);
}
```

```
int ffromc() {
    int f = 12;
    int c = (f - 32) * 5 / 9;
    return c;
}

int reverse() {
    int number;
    printf("Enter three-digit number: ");
    scanf("%d", &number);

    int rem1 = number % 10;
    number = number / 10;
    int rem2 = number % 10;
    number = number / 10;
    int rem3 = number % 10;

    int sum = rem1 + rem2 + rem3;

    printf("Reverse number: %d%d%d\n", rem1, rem2, rem3);
    return sum;
}

int evenodd() {
    int number;
    printf("Enter number: ");
```

```
    scanf("%d", &number);

    if (number % 2 == 0) {
        return 1;
    } else {
        return 0;
    }
}

double calculatebasic() {
    int basic;
    printf("Enter basic salary: ");
    scanf("%d", &basic);

    double da, ta, hra, totalsalary;

    if (basic <= 5000) {
        da = 0.10 * basic;
        ta = 0.15 * basic;
        hra = 0.25 * basic;
    } else {
        da = 0.15 * basic;
        ta = 0.25 * basic;
        hra = 0.30 * basic;
    }
    totalsalary = basic + ta + da + hra;
```

```
    return totalsalary;
}

int eligible() {
    int age;
    char gender;
    printf("Enter age: ");
    scanf("%d", &age);
    printf("Enter gender (M/F): ");
    scanf(" %c", &gender);

    if ((gender == 'M' && age >= 21) || (gender == 'F' && age >= 18)) {
        return 1;
    } else {
        return 0;
    }
}

double student() {
    char ch = 'y';
    printf("Are you a student? Enter y or n: ");
    scanf(" %c", &ch);

    int price;
    printf("Enter price of item: ");
    scanf("%d", &price);
```

```
    double dis = 0;

    if (ch == 'y') {
        if (price > 500) {
            dis = 0.20;
        } else {
            dis = 0.10;
        }
    } else if (ch == 'n') {
        if (price > 600) {
            dis = 0.15;
        } else {
            dis = 0.00;
        }
    }

    double douam = price * dis;
    double final = price - douam;
    return final;
}

int calculation(){
    int start;
    printf("Enter start number: ");
    scanf("%d", &start);
    int end;
```

```
    printf("Enter end number: ");
    scanf("%d", &end);
    int sum = 0;

    while(start <= end){
        sum = sum + start;
        start++;
    }
    return sum;
}

int fectorial(){
    int a = 1;
    int b;

    printf("Enter factorial number: ");
    scanf("%d", &b);
    int rev = 1;
    while(a <= b){
        rev = rev * a;
        a++;
    }
    return rev;
}

int checkarmstrong(){
```

```
    int no = 153;
    int org = no;
    int real = org;
    int counter = 0;
    int sum = 0;
    while (no > 0) {
        no = no / 10;
        counter++;
    }
    while (org > 0) {
        int digit = org % 10;
        int power = 1;
        for (int i = 1; i <= counter; i++) {
            power = power * digit;
        }
        sum = sum + power;
        org = org / 10;
    }
    if (sum == real) {
        return 1;
    }
    return 0;
}

int checkperfect(){
    int num = 30;
```

```
    int sum = 0;
    for(int i = 1; i < num; i++){
        if(num % i == 0){
            sum = sum + i;
        }
    }
    if(num == sum){
        return 1;
    }
    return 0;
}

int checkpalindrome(){
    int no;
    printf("Enter number: ");
    scanf("%d", &no);
    int org = no;
    int rev = 0, rem = 0;
    while(no > 0){
        rem = no % 10;
        rev = rev * 10 + rem;
        no = no / 10;
    }
    if(org == rev){
        return 1;
    }
```

```
    return 0;
}

int digit(){
    int num;
    printf("Enter number: ");
    scanf("%d", &num);
    int firstdigit, lastdigit;
    lastdigit = num % 10; // Get the last digit
    // Get the first digit
    int temp = num;
    while (temp >= 10) {
        temp = temp / 10;
    }
    firstdigit = temp;
    int sum = firstdigit + lastdigit;
    printf("First digit: %d\n", firstdigit);
    printf("Last digit: %d\n", lastdigit);
    return sum;
}
```

Assignment No 5 Type 3

```
#include <stdio.h>
#include <math.h>

void ffromc(int);
void aeraandparameter(int, int, float);
void reverse(int);
void evenodd(int);
void calculatebasic(int);
void eligible(int, char);
void discount(float);
void greater(int, int, int);
void choicceopp(int, int, char);
void displaychoice();
void studentornot(char, int);
void printnumber();
void printtable(int);
void calculatesumofnumber(int, int);
void checkprimeornot(int);
void checkarmstrong(int);
void checkperfect(int);
void factorial(int);
void checkpalindrome(int);
void firstdigit(int);
```

```
void rangepoerfect(int ,int );
int main() {
    int f = 12;
    ffromc(f);

    int length, width;
    float radius;
    printf("Enter length: ");
    scanf("%d", &length);
    printf("Enter width: ");
    scanf("%d", &width);
    printf("Enter value of radius: ");
    scanf("%f", &radius);
    aeraandparameter(length, width, radius);

    int number;
    printf("Enter three-digit number: ");
    scanf("%d", &number);
    reverse(number);

    int numberr;
    printf("Enter number: ");
    scanf("%d", &numberr);
    evenodd(numberr);

    int basic;
```

```
printf("Enter basic salary: ");
scanf("%d", &basic);
calculatebasic(basic);

int age;
char gender;
printf("Enter age: ");
scanf("%d", &age);
printf("Enter gender (M/F): ");
scanf(" %c", &gender);
eligible(age, gender);

float price;
printf("Enter item price: ");
scanf("%f", &price);
discount(price);

int a, b, c;
printf("Enter three numbers: ");
scanf("%d %d %d", &a, &b, &c);
greater(a, b, c);

int aa, bb;
char op;
printf("Enter two numbers: ");
scanf("%d %d", &aa, &bb);
```

```
printf("Choose operator (+, -, *, /): ");
scanf(" %c", &op);
choicceopp(aa, bb, op);

displaychoice();

char ch;
int pricee;
printf("Are you a student? (y/n): ");
scanf(" %c", &ch);
printf("Enter price of item: ");
scanf("%d", &pricee);
studentornot(ch, pricee);

printnumber();

int num;
printf("Enter number: ");
scanf("%d", &num);
printtable(num);

int start, end;
printf("Enter start number: ");
scanf("%d", &start);
printf("Enter end number: ");
scanf("%d", &end);
```

```
    calculatesumofnumber(start, end);

    int numm;
    printf("Enter a number: ");
    scanf("%d", &numm);
    checkprimeornot(numm);

    int nummm;
    printf("Enter a number: ");
    scanf("%d", &nummm);
    checkarmstrong(nummm);

    int nummmm;
    printf("Enter a number: ");
    scanf("%d", &nummmm);
checkperfect(nummmm);

int nummmmm;
  printf("Enter a number: ");
    scanf("%d", &nummmmm);
     factorial( nummmmm);

int nummmmmm;
 printf("Enter a number: ");
    scanf("%d", &nummmmmm);
    checkpalindrome(nummmmmm);
```

```
    int num; printf("Enter number:
    "); scanf("%d",
    &nummmmmmm); firstdigit(
    nummmmmmm);



     int startt, endd;
    printf("Enter range (start and end): ");
    scanf("%d %d", &startt, &endd);
    rangepoerfect(startt, endd);

    return 0;
}

void ffromc(int f) {
    int c = (f - 32) * 5 / 9;
    printf("%d°F is %d°C\n", f, c);
}

void aeraandparameter(int length, int width, float radius) {
    double area, perimeter, circle_area, circle_perimeter;
    const double PI = 3.1416;

    area = length * width;
```

```
    perimeter = 2 * (length + width);
    circle_area = PI * radius * radius;
    circle_perimeter = 2 * PI * radius;

    printf("Area of rectangle = %.2f\n", area);
    printf("Perimeter of rectangle = %.2f\n", perimeter);
    printf("Area of circle = %.2f\n", circle_area);
    printf("Perimeter of circle = %.2f\n", circle_perimeter);
}

void reverse(int number) {
    int rem1 = number % 10;
    number = number / 10;
    int rem2 = number % 10;
    number = number / 10;
    int rem3 = number % 10;

    int sum = rem1 + rem2 + rem3;
    printf("Sum of digits: %d\n", sum);
    printf("Reversed number: %d%d%d\n", rem1, rem2, rem3);
}

void evenodd(int number) {
    if (number % 2 == 0) {
        printf("%d is even\n", number);
    } else {
```

```
        printf("%d is odd\n", number);
    }
}

void calculatebasic(int basic) {
    double da, ta, hra, totalsalary;

    if (basic <= 5000) {
        da = 0.10 * basic;
        ta = 0.15 * basic;
        hra = 0.25 * basic;
    } else {
        da = 0.15 * basic;
        ta = 0.25 * basic;
        hra = 0.30 * basic;
    }
    totalsalary = basic + ta + da + hra;
    printf("Total salary is = %.2lf\n", totalsalary);
}

void eligible(int age, char gender) {
    if ((gender == 'M' && age >= 21) || (gender == 'F' && age >= 18)) {
        printf("Eligible for marriage\n");
    } else {
        printf("Not eligible for marriage\n");
    }
```

```
}

void discount(float price) {
    double discount = 0;
    if (price < 1000) {
        discount = 0.10;
    } else if (price >= 1000 && price <= 5000) {
        discount = 0.20;
    } else {
        discount = 0.30;
    }
    double final = price - (price * discount);
    printf("Final price after discount: %.2f\n", final);
}

void greater(int a, int b, int c) {
    if (a >= b && a >= c) {
        printf("%d is the greatest\n", a);
    } else if (b >= c) {
        printf("%d is the greatest\n", b);
    } else {
        printf("%d is the greatest\n", c);
    }
}

void choicceopp(int a, int b, char op) {
```

```
    if (op == '+') {
        printf("Result: %d\n", a + b);
    } else if (op == '-') {
        printf("Result: %d\n", a - b);
    } else if (op == '*') {
        printf("Result: %d\n", a * b);
    } else if (op == '/') {
        if (b != 0) {
            printf("Result: %d\n", a / b);
        } else {
            printf("Error: Division by zero.\n");
        }
    } else {
        printf("Invalid operator.\n");
    }
}

void displaychoice() {
    int ch;
    printf("Enter your choice (1 for even/odd, 2 for basic salary calculation): ");
    scanf("%d", &ch);

    if (ch == 1) {
        int no;
        printf("Enter number: ");
        scanf("%d", &no);
```

```
        evenodd(no);
    } else if (ch == 2) {
        int basic;
        printf("Enter basic salary: ");
        scanf("%d", &basic);
        calculatebasic(basic);
    } else {
        printf("Invalid choice.\n");
    }
}

void studentornot(char ch, int price) {
    double discount = (ch == 'y' || ch == 'Y') ? (price > 500 ? 0.20 : 0.10) : (price
> 600 ? 0.15 : 0.00);
    double final = price - (price * discount);
    printf("Final price after discount: %.2f\n", final);
}

void printnumber() {
    for (int i = 1; i <= 10; i++) {
        printf("%d\n", i);
    }
}

void printtable(int num) {
    for (int i = 1; i <= 10; i++) {
```

```
        printf("%d x %d = %d\n", num, i, num * i);
    }
}

void calculatesumofnumber(int start, int end) {
    int sum = 0;
    for (int i = start; i <= end; i++) {
        sum += i;
    }
    printf("Sum = %d\n", sum);
}

void checkprimeornot(int num) {
    int isPrime = 1;
    if (num <= 1) {
        isPrime = 0;
    } else {
        for (int i = 2; i <= num / 2; i++) {
            if (num % i == 0) {
                isPrime = 0;
                break;
            }
        }
    }
    printf("%d is %s prime number.\n", num, isPrime ? "a" : "not a");
}
```

```
void checkarmstrong(int num) {
    int temp, remainder, result = 0, n = 0;
    temp = num;
    while (temp != 0) {
        temp /= 10;
        ++n;
    }
    temp = num;
    while (temp != 0) {
        remainder = temp % 10;
        result += pow(remainder, n);
        temp /= 10;
    }
    if (result == num) {
        printf("%d is an Armstrong number.\n", num);
    } else {
        printf("%d is not an Armstrong number.\n", num);
    }
}



void checkperfect(int num) {
    int sum = 0;
```

```
    for (int i = 1; i < num; i++) {
        if (num % i == 0) {
            sum += i;
        }
    }
    if (sum == num) {
        printf("%d is a perfect number.\n", num);
    } else {
        printf("%d is not a perfect number.\n", num);
    }
}


void factorial(int num) {
    int  fact = 1;
    printf("Enter a number: ");
    scanf("%d", &num);

    for (int i = 1; i <= num; i++) {
        fact *= i;
    }
    printf("Factorial of %d is %d\n", num, fact);
}
```

```
void checkpalindrome(int  num) {
    int original, reversed = 0, remainder;
    printf("Enter a number: ");
    scanf("%d", &num);

    original = num;
    while (num != 0) {
        remainder = num % 10;
        reversed = reversed * 10 + remainder;
        num /= 10;
    }

    if (original == reversed) {
        printf("%d is a palindrome.\n", original);
    } else {
        printf("%d is not a palindrome.\n", original);
    }
}


void firstdigit(int num) {

    int first = num;
    while (first >= 10) {
        first /= 10;
    }
```

```
    int last = num % 10;
    printf("First digit: %d, Last digit: %d, Sum: %d\n", first, last, first + last);
}

void rangepoerfect(int start,int end) {
    // int start, end;
    // printf("Enter range (start and end): ");
    // scanf("%d %d", &start, &end);

    for (int num = start; num <= end; num++) {
        int sum = 0;
        for (int i = 1; i < num; i++) {
            if (num % i == 0) {
                sum += i;
            }
        }
        if (sum == num) {
            printf("%d\n", num);
        }
    }
}
```

Assignment no 5

type 4

```
#include <stdio.h>
#include <math.h>

int ffromc(int);
double aeraandparameter(int, int, float);
int reverse(int);
int evenodd(int);
double calculatebasic(int);
int eligible(int, char);
float discount(float);
int greater(int, int, int);
int choicceopp(int, int, char);
int displaychoice();
float studentornot(char, int);
void printnumber();
void printtable(int);
int calculatesumofnumber(int, int);
int checkprimeornot(int);
int checkarmstrong(int);

int main() {
    int f = 12;
    printf("%d°F is %d°C\n", f, ffromc(f));

    int length, width;
```

```
float radius;
printf("Enter length: ");
scanf("%d", &length);
printf("Enter width: ");
scanf("%d", &width);
printf("Enter radius: ");
scanf("%f", &radius);
aeraandparameter(length, width, radius);

int number;
printf("Enter three-digit number: ");
scanf("%d", &number);
reverse(number);

int numberr;
printf("Enter number: ");
scanf("%d", &numberr);
evenodd(numberr);

int basic;
printf("Enter basic salary: ");
scanf("%d", &basic);
printf("Total Salary: %.2lf\n", calculatebasic(basic));

int age;
char gender;
```

```
printf("Enter age: ");
scanf("%d", &age);
printf("Enter gender (M/F): ");
scanf(" %c", &gender);
eligible(age, gender);

float price;
printf("Enter item price: ");
scanf("%f", &price);
printf("Final price after discount: %.2f\n", discount(price));

int a, b, c;
printf("Enter three numbers: ");
scanf("%d %d %d", &a, &b, &c);
printf("%d is greatest\n", greater(a, b, c));

int aa, bb;
char op;
printf("Enter two numbers: ");
scanf("%d %d", &aa, &bb);
printf("Choose operator (+, -, *, /): ");
scanf(" %c", &op);
printf("Result: %d\n", choicceopp(aa, bb, op));

displaychoice();
```

```
char ch;
int pricee;
printf("Are you a student? (y/n): ");
scanf(" %c", &ch);
printf("Enter price of item: ");
scanf("%d", &pricee);
printf("Final student price: %.2f\n", studentornot(ch, pricee));

printnumber();

int num;
printf("Enter number to print table: ");
scanf("%d", &num);
printtable(num);

int start, end;
printf("Enter start and end range: ");
scanf("%d %d", &start, &end);
printf("Sum in range = %d\n", calculatesumofnumber(start, end));

int checkNum;
printf("Enter number to check prime: ");
scanf("%d", &checkNum);
checkprimeornot(checkNum);

int armNum;
```

```
    printf("Enter number to check Armstrong: ");
    scanf("%d", &armNum);
    checkarmstrong(armNum);

    return 0;
}

int ffromc(int f) {
    return (f - 32) * 5 / 9;
}

double aeraandparameter(int length, int width, float radius) {
    const double PI = 3.1416;
    double area = length * width;
    double perimeter = 2 * (length + width);
    double circle_area = PI * radius * radius;
    double circle_perimeter = 2 * PI * radius;

    printf("Area of rectangle = %.2f\n", area);
    printf("Perimeter of rectangle = %.2f\n", perimeter);
    printf("Area of circle = %.2f\n", circle_area);
    printf("Perimeter of circle = %.2f\n", circle_perimeter);

    return area;
}
```

```
int reverse(int number) {
    int rem1 = number % 10;
    number /= 10;
    int rem2 = number % 10;
    number /= 10;
    int rem3 = number;
    int rev = rem1 * 100 + rem2 * 10 + rem3;
    int sum = rem1 + rem2 + rem3;

    printf("Reversed number: %d\n", rev);
    printf("Sum of digits: %d\n", sum);

    return rev;
}

int evenodd(int number) {
    if (number % 2 == 0) {
        printf("%d is even\n", number);
        return 0;
    } else {
        printf("%d is odd\n", number);
        return 1;
    }
}

double calculatebasic(int basic) {
```

```
    double da, ta, hra;

    if (basic <= 5000) {
        da = 0.10 * basic;
        ta = 0.15 * basic;
        hra = 0.25 * basic;
    } else {
        da = 0.15 * basic;
        ta = 0.25 * basic;
        hra = 0.30 * basic;
    }

    return basic + da + ta + hra;
}

int eligible(int age, char gender) {
    if ((gender == 'M' && age >= 21) || (gender == 'F' && age >= 18)) {
        printf("Eligible for marriage\n");
        return 1;
    } else {
        printf("Not eligible for marriage\n");
        return 0;
    }
}

float discount(float price) {
```

```
    float disc;
    if (price < 1000) disc = 0.10;
    else if (price <= 5000) disc = 0.20;
    else disc = 0.30;

    return price - (price * disc);
}

int greater(int a, int b, int c) {
    if (a >= b && a >= c) return a;
    else if (b >= c) return b;
    else return c;
}

int choicceopp(int a, int b, char op) {
    if (op == '+') return a + b;
    else if (op == '-') return a - b;
    else if (op == '*') return a * b;
    else if (op == '/') {
        if (b != 0) return a / b;
        else {
            printf("Division by zero!\n");
            return 0;
        }
    } else {
        printf("Invalid operator\n");
```

```
        return 0;
    }
}

int displaychoice() {
    int ch;
    printf("Enter choice (1 for even/odd, 2 for salary): ");
    scanf("%d", &ch);

    if (ch == 1) {
        int num;
        printf("Enter number: ");
        scanf("%d", &num);
        return evenodd(num);
    } else if (ch == 2) {
        int sal;
        printf("Enter basic salary: ");
        scanf("%d", &sal);
        printf("Total Salary = %.2lf\n", calculatebasic(sal));
        return 1;
    } else {
        printf("Invalid choice\n");
        return -1;
    }
}
```

```
float studentornot(char ch, int price) {
    float discount = (ch == 'y' || ch == 'Y') ? (price > 500 ? 0.20 : 0.10) : (price > 600 ? 0.15 : 0.00);
    return price - (price * discount);
}

void printnumber() {
    for (int i = 1; i <= 10; i++)
        printf("%d\n", i);
}

void printtable(int num) {
    for (int i = 1; i <= 10; i++)
        printf("%d x %d = %d\n", num, i, num * i);
}

int calculatesumofnumber(int start, int end) {
    int sum = 0;
    for (int i = start; i <= end; i++)
        sum += i;
    return sum;
}

int checkprimeornot(int num) {
    if (num <= 1) {
        printf("%d is not a prime number\n", num);
```

```
        return 0;
    }
    for (int i = 2; i <= num / 2; i++) {
        if (num % i == 0) {
            printf("%d is not a prime number\n", num);
            return 0;
        }
    }
    printf("%d is a prime number\n", num);
    return 1;
}

int checkarmstrong(int num) {
    int temp = num, n = 0, result = 0;

    while (temp != 0) {
        temp /= 10;
        n++;
    }

    temp = num;
    while (temp != 0) {
        int digit = temp % 10;
        result += pow(digit, n);
        temp /= 10;
    }
```

}