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Dept-Information Technology

2nd year

Subject-Programming Lab

ROLL-2021ITB060.

Sem-3rd

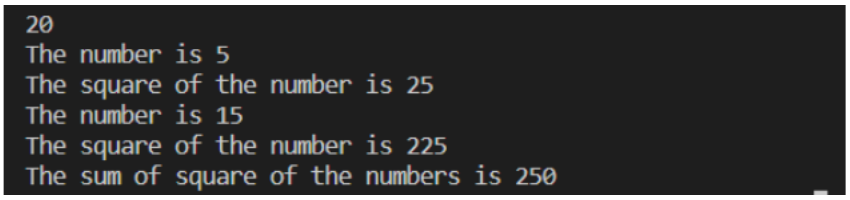
1. WAP to calculate the sum of the squares of those numbers only whose LSD is five and falling between two numbers taken as user input. Print the numbers satisfying the constraints, their squares, and the sum on the terminal.

Source Code:

```
#include <stdio.h>
int main()
{ int a, b, sum = 0;
 printf("Enter the first and last number: ");
 scanf("%d%d", &a, &b);
 for (int i = a; i <= b; i++)
 { if (i % 10 == 5)
 { printf("The number is %d\n", i);
 printf("The square of the number is %d\n", i * i);
 sum += i * i;
 }
 }
 printf("The sum of square of the numbers is %d", sum);

return 0;
}
```

Output:

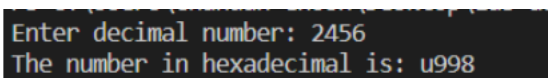


2. WAP to convert decimal to hexadecimal number.

Source Code:

```
#include <stdio.h>
int main()
{ long decimalnum, quotient, remainder;
 int i, j = 0;
 char hexadecimalnum[100];
 printf("Enter decimal number: ");
 scanf("%ld", &decimalnum);
 quotient = decimalnum;
 while (quotient != 0)
 { remainder = quotient % 16;
 if (remainder < 10)
 hexadecimalnum[j++] = 48 + remainder;
 else
 hexadecimalnum[j++] = 55 + remainder;
 quotient = quotient / 16;
 }
 printf("The number in hexadecimal is: ");
 for (i = j; i >= 0; i--)
 printf("%c", hexadecimalnum[i]);
 return 0;
}
```

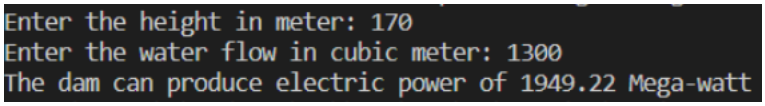
Output:



3. WAP to assist in the design of a hydroelectric dam. Prompt the user for the dam's height and the number of cubic meters of water projected to flow from the top to the bottom of the dam each second. Predict how many megawatts of power will be produced if 90% of the work done on the water by gravity is converted to electrical energy.

For one run, use height = 170 m and flow of 1.30 x 10^3 m^3/s.

Source Code:

```
#include <stdio.h>
int main()
{
 float height, water_flow, electric_power, g = 9.8, efficiency_constant = 0.9;
 printf("Enter the height in meter: ");
 scanf("%f", &height);
 printf("Enter the water flow in cubic meter: ");
 scanf("%f", &water_flow);
 water_flow *= 1000;
 electric_power = (height * water_flow * g * efficiency_constant) / 1000000;
 printf("The dam can produce electric power of %.2f Mega-watt", electric_power);
 return 0;
}
```

Output: