**Independent University, Bangladesh**

**CSC101 + L, Section: 15**

**Assignment 3**

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**1.**

#include <stdio.h>

int main ()

{

int i, x = 2, count;

printf ("Prime numbers from 1 to 300\n");

while ( x <= 300 )

{

count = 0;

i = 2;

while ( x > i )

{

if (x % i == 0)

{

count++;

break;

}

i++;

}

if ( count == 0)

{

printf ("%d\n", x);

}

x++;

}

return 0;

}

**2.**

#include <stdio.h>

int main ()

{

char c = 1;

int i = 1;

while ( i <= 7560 )

{

printf ("%c", c);

i++;

}

return 0;

}

**3.**

#include <stdio.h>

int main ()

{

float n, i = 1, sum = 0;

float product = 1,result = 1;

printf ("Enter a number: ");

scanf ("%f", &n);

while ( i <= n)

{

product = product \* i;

result = i / product;

sum = sum + result;

i++;

}

printf ("Sum = %f", sum);

return 0;

}

**4.**

#include <stdio.h>

int main ()

{

printf ("All combinations of 1, 2 and 3:\n");

for ( int i = 1; i <= 3; i++)

{

for ( int j = 1; j <= 3; j++)

{

for ( int k = 1; k <= 3; k++)

{

printf("%d%d%d\n", i, j, k);

}

}

}

return 0;

}

**5.**

#include <stdio.h>

int main ()

{

int num, sum = 0;

printf ("Enter a number to check if it is prime: ");

scanf ("%d", &num);

for ( int i = 1; i < num; i++)

{

if (num % i == 0)

{

sum = sum + i;

}

}

if ( sum == num )

{

printf ("%d is a perfect number\n", num);

}

else

{

printf ("%d is not a perfect number\n", num);

}

return 0;

}

**6.**

#include <stdio.h>

int main ()

{

int n = 2147483647; // last positive value of int range

for (int i = 0;;)

{

if ( i >= 0 && i <= n)

{

printf ("%d\n", i);

i++;

}

if (i == n)

{

i = 0;

}

if (i <= 0 && i >= -n)

{

printf ("%d\n", i);

i--;

}

if ( i == -n)

{

break;

}

}

return 0;

}

**7.**

#include <stdio.h>

int main ()

{

printf ("A B C D E F G F E D C B A\n");

for (int i = 1; i <= 7; i++)

{

for ( char c = 65; c <= (71 - i); c++)

{

printf ("%c ", c);

}

for (int j = 1; j <= i; j++)

{

printf (" ");

}

for (int k = 1; k <= i; k++)

{

printf (" ");

}

for (int l = 1; l <= i; l++)

{

printf (" ");

}

for ( char d = 71 - i; d >= 65 ; d--)

{

printf ("%c ", d);

}

printf ("\n");

}

return 0;

}

**8.**

#include <stdio.h>

int main ()

{

int i,j;

int n,m;

char h = 3;

printf ("Enter a number of rows: ");

scanf ("%d", &n);

printf ("Enter a number of columns: ");

scanf ("%d", &m);

for ( i = 1 ; i <= n; i++)

{

for ( j = 1; j <= m; j++)

{

printf ("%c", h);

if (h==3)

{

h = 4;

}

else if ( h == 4)

{

h = 3;

}

}

printf ("\n");

}

return 0;

}

**9.**

#include <stdio.h>

int main ()

{

int i,j,k,n = 1;

for (i = 1; i <= 4; i++)

{

for (j = 1; j <= 4-i; j++)

{

printf (" ");

}

for (k = 1; k <= i; k++)

{

printf ("%d ", n);

n++;

}

printf ("\n");

}

return 0;

}