**PS1-Week 1 -2, Qsn1**

#include <string>

using namespace std;

void pr(string str);

void prn();

typedef string prstr;

int main()

{

int noOfPens;

pr("\nEnter number of pens to place in stand : ");

cin >> noOfPens;

pr("\nYou entered " + to\_string(noOfPens) + " pens to place in stand");

if (noOfPens > 5)

pr("\n\nPen stand full! ");

pr("\n\nCompleted Qsn 1\n\n");

return 0;

}

void pr(string str)

{

cout << str;

}

void prn()

{

cout << endl;

}

**PS1-Week 1 -2, Qsn2**

#include <iostream>

#include <iomanip>

#include <string>

using namespace std;

void pr(string str);

void prn();

typedef string prstr;

int main()

{

int age, wt;

pr("\nEnter your age : ");

cin >> age;

pr("\nEnter your weight : ");

cin >> wt;

if ((18 < age && age < 55) && (wt > 45))

{

pr("\nEligible to donate. ");

}

else

{

pr("\nNot Eligible to donate.");

}

pr("\n\nCompleted Qsn 2\n\n");

return 0;

}

void pr(string str)

{

cout << str;

}

void prn()

{

cout << endl;

}

**PS1-Week 1 -2, Qsn3**

#include <iostream>

#include <iomanip>

#include <string>

using namespace std;

void pr(string str);

void prn();

typedef string prstr;

int main()

{

int age;

pr("\nEnter your age : ");

cin >> age;

if (age >= 18)

pr("\nEligible to vote");

else

pr("\nNot eligible to vote");

pr("\n\nCompleted Qsn 3\n");

return 0;

}

void pr(string str)

{

cout << str;

}

void prn()

{

cout << endl;

}

**PS1-Week 1 -2, Qsn4**

#include <iostream>

#include <iomanip>

#include <string>

using namespace std;

void pr(string str);

void prn();

typedef string prstr;

int main()

{

double cMk, wMk;

double aggPct;

pr("\nEnter Course Wk marks(0 to 50) : ");

cin >> cMk;

pr("\nEnter Written Wk marks(0 to 50) : ");

cin >> wMk;

aggPct = cMk + wMk;

cout << fixed << setprecision(1);

prn();

if (aggPct >= 45)

{

if ((cMk < 20) || (wMk < 20))

{

pr("\nFailed : Result(moderated) : 45%");

}

else

{

pr("\nPassed : Result : " + to\_string(aggPct));

}

}

else

{

pr("\nFailed : Result : " + to\_string(aggPct));

}

pr("\n\nCompleted Qsn 4\n");

return 0;

}

void pr(string str)

{

cout << str;

}

void prn()

{

cout << endl;

}

**PS1-Week 1 -2, Qsn5**

#include <iostream>

#include <iomanip>

#include <string>

using namespace std;

void pr(string str);

void prn();

typedef string prstr;

int chgCalc(int calls);

int main()

{

int totCalls;

int chgs;

pr("\nEnter Total calls made : ");

cin >> totCalls;

chgs = chgCalc(totCalls);

pr("\nCall charges : " + to\_string(chgs) + "\n");

return 0;

}

int chgCalc(int calls)

{

int chgs = 0;

int rate = 0;

if(0==calls) return 0;

if(calls <=99)

{

return 50;

}

else if(100 <= calls && calls <= 199)

{

chgs = 50 + (calls - 99) \* 1;

}

else if(200 <= calls && calls <= 299)

{

chgs = 150 + (calls - 199) \* 2;

}

else if(300 <= calls)

{

chgs = 350 + (calls - 299) \* 3;

}

return chgs;

}

void pr(string str)

{

cout << str;

}

void prn()

{

cout << endl;

}

**PS1-Week 1 -2, Qsn6**

#include <iostream>

#include <iomanip>

#include <string>

using namespace std;

void pr(string str);

void prn();

typedef string prstr;

const int STARTNO = 7;

const int ENDNO = 100;

void chkNo(int stNo, int endNo);

bool div5and6(int aNo);

int main()

{

int theStartNo = STARTNO;

int theEndNo = ENDNO;

pr("\nThe Start No ; " + to\_string(theStartNo) + ", the End No : " + to\_string(theEndNo));

prn();

chkNo(theStartNo, theEndNo);

return 0;

}

void chkNo(int stNo, int endNo)

{

int theStartNo = stNo;

int theEndNo = endNo;

bool found = false;

do

{

theStartNo += 1;

if (0 == theStartNo % 4)

{

if (div5and6(theStartNo))

{

found = true;

pr("\nThe No : " + to\_string(theStartNo) + " meets the conditions\n\n");

}

}

} while (theStartNo <= theEndNo);

}

bool div5and6(int aNo)

{

int rem5, rem6;

int theNo = aNo;

rem5 = theNo % 5;

rem6 = theNo % 6;

if (4 == rem5 && 4 == rem6)

return true;

return false;

}

void pr(string str)

{

cout << str;

}

void prn()

{

cout << endl;

}

**PS1-Week 1 -2, Qsn7**

#include <iostream>

#include <iomanip>

#include <string>

using namespace std;

void pr(string str);

void prn();

typedef string prstr;

void getInputNumbers();

int main()

{

getInputNumbers();

prstr str = "\nCompleted Qsn 7";

pr(str);

prn();

}

void getInputNumbers()

{

float theNo = 0;

int theTotCnt = 0;

int thePosCnt = 0;

int theNegCnt = 0;

float thePosTot = 0, theNegTot = 0, theTotal = 0;

pr("\nEnter series of positive and/or negative numbers, enter 0 to end entries \n");

do

{

cin >> theNo;

if (0 == theNo && 0 == theTotCnt)

{

pr("\nNo valid entries...Quitting!");

return;

}

else if (theNo > 0)

{

thePosCnt += 1;

thePosTot += theNo;

}

else if (theNo < 0)

{

theNegCnt += 1;

theNegTot += theNo;

}

theTotCnt = thePosCnt + theNegCnt;

theTotal = thePosTot + theNegTot;

} while (theNo != 0);

pr("\nTotal Positive entries :" + to\_string(thePosCnt));

pr("\nTotal Negative entries :" + to\_string(theNegCnt));

pr("\nTotal entries :" + to\_string(theTotCnt));

prn();

cout << fixed << showpoint;

cout << setprecision(2);

pr("\nTotal of Positive entries :" + to\_string(thePosTot));

pr("\nTotal of Negative entries :" + to\_string(theNegTot));

pr("\nTotal of all entries :" + to\_string(theTotal));

prn();

}

void pr(string str)

{

cout << str;

}

void prn()

{

cout << endl;

}

**PS1-Week 1 -2, Qsn8**

#include <iostream>

#include <string>

using namespace std;

void pr(string str);

void prn();

typedef string prstr;

void computeNos();

int main()

{

computeNos();

prn();

}

void computeNos()

{

int theNo;

int theRem = 0;

int theQt = 0;

int theSum = 0;

int theMul = 1;

prstr str;

pr("\nEnter a No : ");

cin >> theNo;

do

{

theRem = theNo % 10;

theQt = theNo / 10;

theSum += theRem;

theMul \*= theRem;

str = to\_string(theRem);

pr(str);

theNo = theQt;

} while (theNo > 0);

str = "\nThe Sum of each digit = " + to\_string(theSum);

pr(str);

str = "\nThe Multiplication of each digit = " + to\_string(theMul);

pr(str);

}

void pr(string str)

{

cout << str;

}

void prn()

{

cout << endl;

}

**PS1-Week 1 -2, Qsn9**

#include <iostream>

#include <string>

using namespace std;

const int NUM = 10;

const int POW = 3;

void pr(string str);

void prn();

typedef string prstr;

void prPwr(int aBs, int aPw);

void computeAndPrintCubes(int aLtNo, int aPow);

int main()

{

int theLastNo = NUM;

int thePow = POW;

pr("\nCubes of numbers from 1 to " + to\_string(theLastNo) + "\n");

prn();

computeAndPrintCubes(theLastNo, thePow);

prn();

}

void computeAndPrintCubes(int aLtNo, int aPow)

{

int theLastNo = aLtNo;

int thePow = aPow;

int theQt = 0;

int theSum = 0;

int theMul = 1;

prstr str;

int curNo = 1;

do

{

int curItn = thePow;

do

{

theMul \*= curNo;

curItn -= 1;

} while (curItn > 0);

prPwr(curNo, thePow);

pr(" = " + to\_string(theMul));

prn();

theMul = 1;

curNo += 1;

} while (curNo <= 10);

}

void prPwr(int aBs, int aPw)

{

int theBase = aBs;

int thePwr = aPw;

pr(to\_string(theBase) + "^" + to\_string(thePwr));

}

void pr(string str)

{

cout << str;

}

void prn()

{

cout << endl;

}

**PS1-Week 1 -2, Qsn10**

#include <iostream>

#include <string>

using namespace std;

void pr(string str);

void prn();

typedef string prstr;

void prPwr(int aBs, int aPw);

void computeGeoMetProgSum(int aBs, int aMxExp);

int main()

{

int theBase, theMaxExp;

pr("\nEnter the value X for Base : ");

cin >> theBase;

pr("\nEnter the value N for Exponent : ");

cin >> theMaxExp;

computeGeoMetProgSum(theBase, theMaxExp);

prn();

}

void computeGeoMetProgSum(int aBs, int aMxExp)

{

int theBase = aBs, theMaxExp = aMxExp;

int theGSum = 1;

int theXMul = 1;

int theTermNo = 1;

prstr str;

if (0 == theBase && 0 == theMaxExp)

{

pr("\n0 to Power 0 is undefined ...\n Quitting..\n");

return;

}

else if (0 == theMaxExp)

{

theGSum = 2;

}

else

{

do

{

int theCurPwrItn = theTermNo;

do

{

theXMul \*= theBase; // 1. base 5, 1\*5, 2.

theCurPwrItn -= 1;

} while (theCurPwrItn > 0);

theTermNo += 1;

theGSum += theXMul;

theXMul = 1;

} while (theTermNo <= theMaxExp);

}

str = "\nThe value X for Base : " + to\_string(theBase);

pr(str);

str = "\nThe value N for Exponent : " + to\_string(theMaxExp);

pr(str);

prn();

pr("\nThe Geometric Proggression series is : ");

prn();

pr("1");

if (0 == theMaxExp)

{

pr(" + ");

prPwr(theBase, 0);

}

else

{

int theIncrExp = 1;

do

{

if (theIncrExp > 5)

{

pr("........ + ");

theIncrExp = theMaxExp;

}

else

{

pr(" + ");

}

prPwr(theBase, theIncrExp);

theIncrExp += 1;

} while (theIncrExp <= theMaxExp);

}

str = "\nSum of the Geometric Progression is : " + to\_string(theGSum);

pr(str);

prn();

}

void prPwr(int aBs, int aPw)

{

int theBase = aBs;

int thePwr = aPw;

if (0 == thePwr)

{

pr("1");

}

else if (1 == thePwr)

{

pr(to\_string(theBase));

}

else

{

pr(to\_string(theBase) + "^" + to\_string(thePwr));

}

}

void pr(string str)

{

cout << str;

}

void prn()

{

cout << endl;

}

**PS1-Week 1 -2, Challeng Qsn 1**

#include <iostream>

#include <string>

using namespace std;

const int NUM = 5;

void pr(string str);

void prn();

typedef string prstr;

void printSeries(int aNo);

int main()

{

int theMaxNo = NUM;

printSeries(theMaxNo);

pr("\nPrint Pattern Completed!");

prn();

}

void printSeries(int aNo)

{

int theMaxNo = aNo;

int curNo = 1;

while (curNo <= theMaxNo)

{

int curItn = 1;

do

{

prstr str = to\_string(curItn) + " ";

pr(str);

curItn += 1;

} while (curItn <= curNo);

curNo += 1;

prn();

};

}

void pr(string str)

{

cout << str;

}

void prn()

{

cout << endl;

}

**PS1-Week 1 -2, Challenge Qsn 2**

#include <iostream>

#include <string>

using namespace std;

const int NUM = 5;

void pr(string str);

void prn();

typedef string prstr;

int convertToOdd(int aNo);

void printSeries(int aNo, int lnNo);

void printFirstLastLine(int aNo);

void prOtherLines(int aNo, int lnNo, int mSp);

void printDecrInc(int stNo, int endNo, bool decr);

void prMidNos(int aNo, int nCnt);

int main()

{

int theMaxNo = NUM;

theMaxNo = convertToOdd(theMaxNo);

prn();

int theLnNo = 1;

printSeries(theMaxNo, theLnNo);

prn();

}

int convertToOdd(int aNo)

{

int theNo = aNo;

if (0 == (theNo % 2) && (4 <= theNo && theNo <= 10))

{

return (theNo - 1);

}

else if (theNo <= 3 || theNo > 10)

{

return 3;

}

return theNo;

}

void printSeries(int aNo, int lnNo)

{

int theMaxNo = aNo;//5

int theLnNo = lnNo;

int theMaxPr = 2 \* theMaxNo - 1;//9 digits

int midSpace = 0;

int stNo = theMaxNo, endNo;

endNo = theMaxNo - theLnNo;//5 -1 =4

midSpace = theMaxPr - 4;

printFirstLastLine(theMaxNo);

do {

prOtherLines(stNo, theLnNo, midSpace);

theLnNo += 1;

midSpace -= 2;

} while (theLnNo < theMaxNo);

theLnNo = theMaxNo -2;

midSpace = 1;

do {

prOtherLines(stNo, theLnNo, midSpace);

theLnNo -= 1;

midSpace += 2;

} while (theLnNo > 0);

prn();

printFirstLastLine(theMaxNo);

}

void printFirstLastLine(int aNo)

{

int theNo = aNo;

int theItn = 2 \* theNo - 1;

do

{

pr(to\_string(theNo));

theItn -= 1;

} while (theItn > 0);

}

void prOtherLines(int aNo, int lnNo, int mSp)

{

int theMaxNo = aNo;//5

int theLnNo = lnNo;

int midSpace = mSp;

int stNo = theMaxNo;

int endNo = stNo - theLnNo;//5 -1 =4

prn();

printDecrInc(stNo, endNo, true);//5, 4

prMidNos(endNo, midSpace);

if (endNo == 1) endNo += 1;

printDecrInc(stNo, endNo, false);

}

void printDecrInc(int stNo, int endNo, bool decr)

{

int theStNo = stNo;

int theEndNo = endNo;

if (decr)//true

{

for (int i = theStNo; i >= theEndNo; i--)//5, 4

{

pr(to\_string(i));

}

}

else {

for (int i = theEndNo; i <= theStNo; i++)

{

pr(to\_string(i));

}

}

}

void prMidNos(int aNo, int nCnt)

{

int theNo = aNo;

int theCnt = nCnt;

for (int i = 0; i < theCnt; i++)

{

pr(to\_string(theNo));

}

}

void pr(string str)

{

cout << str;

}

void prn()

{

cout << endl;

}