A+ Computer Science

**Computer Science Competition**

Judges Packet

**Problem #1**

**60 Points**

**Bookface**

**Test Input File**

22 13

Sam Armstrong Ben Davis

Ben Davis Wesley Chart

Sam Armstrong Danny Vunt

Ben Davis Ariel Hatley

Ariel Hatley David Smith

David Smith Johhny Blaze

Johnny Blaze Danny Vunt

Johhny Blaze Eric Chan

Eric Chan Dylan Rhodes

Dylan Rhodes Abraham Lincoln

Abraham Lincoln Teddy Roosevelt

Teddy Roosevelt Jeb Bush

Jeb Bush Sam Armstrong

Jeb Bush Harry Potter

A A B B

B B C C

C C A A

D D E E

E E F F

F F G G

H H I I

I I J J

Ben Davis

Ariel Hatley

B B

G G

Harry Potter

Dylan Rhodes

E E

Abraham Lincoln

Johnny Blaze

Ben Davis

Danny Vunt

H H

C C

**Test Output To Screen**

Ben Davis

Users that are one connection away: Jeb Bush, David Smith, Danny Vunt

Users that are two connections away: Johhny Blaze, Johnny Blaze, Harry Potter, Teddy Roosevelt

Users that are three connections away: Eric Chan, Abraham Lincoln

Ariel Hatley

Users that are one connection away: Sam Armstrong, Johhny Blaze, Wesley Chart

Users that are two connections away: Jeb Bush, Eric Chan, Danny Vunt

Users that are three connections away: Johnny Blaze, Harry Potter, Dylan Rhodes, Teddy Roosevelt

B B

Users that are one connection away: No users are one connection away

Users that are two connections away: No users are two connections away

Users that are three connections away: No users are three connections away

G G

Users that are one connection away: E E

Users that are two connections away: D D

Users that are three connections away: No users are three connections away

Harry Potter

Users that are one connection away: Sam Armstrong, Teddy Roosevelt

Users that are two connections away: Ben Davis, Abraham Lincoln, Danny Vunt

Users that are three connections away: Johnny Blaze, Wesley Chart, Ariel Hatley, Dylan Rhodes

Dylan Rhodes

Users that are one connection away: Johhny Blaze, Teddy Roosevelt

Users that are two connections away: Jeb Bush, David Smith

Users that are three connections away: Sam Armstrong, Ariel Hatley, Harry Potter

E E

Users that are one connection away: G G

Users that are two connections away: No users are two connections away

Users that are three connections away: No users are three connections away

Abraham Lincoln

Users that are one connection away: Jeb Bush, Eric Chan

Users that are two connections away: Sam Armstrong, Johhny Blaze, Harry Potter

Users that are three connections away: Ben Davis, David Smith, Danny Vunt

Johnny Blaze

Users that are one connection away: Sam Armstrong

Users that are two connections away: Jeb Bush, Ben Davis

Users that are three connections away: Wesley Chart, Ariel Hatley, Harry Potter, Teddy Roosevelt

Ben Davis

Users that are one connection away: Jeb Bush, David Smith, Danny Vunt

Users that are two connections away: Johhny Blaze, Johnny Blaze, Harry Potter, Teddy Roosevelt

Users that are three connections away: Eric Chan, Abraham Lincoln

Danny Vunt

Users that are one connection away: Jeb Bush, Ben Davis

Users that are two connections away: Wesley Chart, Ariel Hatley, Harry Potter, Teddy Roosevelt

Users that are three connections away: Abraham Lincoln, David Smith

H H

Users that are one connection away: J J

Users that are two connections away: No users are two connections away

Users that are three connections away: No users are three connections away

C C

Users that are one connection away: No users are one connection away

Users that are two connections away: No users are two connections away

Users that are three connections away: No users are three connections away

**Problem #2**

**60 Points**

**Intensity**

**Test Input File**

12

Bench-Press

Pull-Ups

Dips

Weighted-Crunches

Seal-Rows

END

Incline-Bench

Incline-Curls

END

Larson-Press

Cable-Curls

Military-Press

Lat-Raises

Skiiers

Leg-Raises

Skull-Crushers

END

Squats

Deadlifts

Quad-Extension

Sus-Machine-In

Sus-Machine-Out

END

Curls

END

a

a

a

a

a

a

a

a

a

a

a

a

END

Banded-Tricps

Money

BlaBLa

API

Backend

Bac-Extensions

Cable-Rows

END

m

m

m

m

m

END

Cardio

Crossfit

END

p

END

p

p

p

p

p

END

l

l

END

**Test Output To Screen**

just right

needs more effort

junk volume

just right

needs more effort

junk volume

junk volume

just right

needs more effort

needs more effort

just right

needs more effort

**Problem #3**

**60 Points**

**Weights**

**Test Input File**

12

135

195

260

85

405

350

125

290

900

50

160

200

**Test Output To Screen**

1 45

1 45 1 25 1 5

2 45 1 10 1 5 1 2.5

2 10

4 45

3 45 1 10 1 5 1 2.5

1 25 1 10 1 5

2 45 1 25 1 5 1 2.5

9 45 2 10 1 2.5

1 2.5

1 45 1 10 1 2.5

1 45 1 25 1 5 1 2.5

**Problem #4**

**60 Points**

**Sign**

**Test Input File**

12

WELCOME TO MY GYM!!

SIGN IN HERE

DO NOT DROP THE WEIGHTS

MAKE SURE TO LEAVE YOUR BELONGINGS IN THE RIGHT PLACE

GET JACKED GUYS LETS GO!!!!!

I DON'T KNOW WHAT I'M SAYING ANYMORE WOOOOO

I'M NEW TO THIS SORT OF THING

RAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAH

WEEWOO WEE OOO

Q

ASOdjIASJOSA

HEEHEE

**Test Output To Screen**

!!MYG YM OT EMOCLEW

EREH NI NGIS

STHGIEW EHT PORD TON OD

ECALP THGIR EHT NI SGNIGNOLEB RUOY EVAEL OT ERUS EKAM

!!!!!OG STEL SYUG DEKCAJ TEG

OOOOOW EROMYNA GNIYAS M'I TAHW WONK T'NOD I

GNIHT FO TROS SIHT OT WEN M'I

HAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAR

OOO EEW OOWEEW

Q

ASOJSAIjdOSA

EEHEEH

**Problem #5**

**60 Points**

**Rack**

**Test Input File**

10

3 3

...

.S.

...

6 10

....p.....

.S......S.

..l.......

...S...S..

..........

qro.....S.

5 5

.....

.S.S.

..o..

.S.S.

.....

1 1

S

2 2

.S

m.

8 8

.S.S.S.S

........

.S.S.S.S

........

S.S.S.S.

........

S.S.S.S.

.......,

4 4

S...

...S

.m..

.S.S

6 2

S.

..

.S

mn

..

S.

2 6

...S..

S..a.S

8 1

S

.

S

.

c

S

c

S

**Test Output To Screen**

1

3

0

1

0

15

3

2

2

2

**Problem #6**

**60 Points**

**Volume**

**Test Input File**

12

2 12 110

4 8 205

10 10 315

2 3 600

1 2 3

4 5 6

12 12 4

42 3 5

5 10 20

3 4 5

5 12 13

3 12 285

**Test Output To Screen**

2640

6560

31500

3600

6

120

576

630

1000

60

780

10260

**Problem #7**

**60 Points**

**Competition**

**Test Input File**

16

1000 995 997 1280 1320

2000 1000

1495 1260 1140

1 3 2 4 5

4 5 6 1 0 20 10

12 68184 1043689 1289 293 5850

78 98 1 12 10 39

1111 2222 3333 4444 5555

76 67 85 47 321 432 12

1000 1450 650 3232 5353

**//the following is one test case – it is all on 1 line in the data file**

1923874 2 333 5 7 222 -100 4 7 9 12345 -198 2 3 4 65 76 243 235 3246 1234 1243 234 4376 76 -191888 2 2 2 2 2 -2 2 2111 2 2 2 2 2 -2002 188898899

-1991818

1777

10 5

**//the following is one test case – it is all on 1 line in the data file**

10000 1 5 76 -19993 3 3435 456 123 26342 -1000 1 1 1 1 1 1 1 1 34231 3245 345 7 7 7 88 -20020 3 3 3333

1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

1919 2 2 2 2 2 2 2 -1988

**Test Output To Screen**

1

1

2

1

3

3

3

0

3

1

28

0

1

15

0

2

**Problem #8**

**60 Points**

**Planning**

**Test Input File**

10

4

06/26/2023

06/25/2023

06/24/2023

07/01/2023

7

07/15/2023

07/10/2023

07/11/2023

07/12/2023

07/13/2023

07/14/2023

07/09/2023

1

06/06/2006

4

06/04/2006

06/03/2006

06/10/2006

06/11/2006

2

06/18/2006

06/19/2006

5

07/15/2023

07/08/2006

07/08/2023

06/25/2006

07/01/2006

3

08/05/2023

08/27/2023

07/04/2023

8

01/01/2001

02/02/2002

03/03/2003

04/04/2004

05/05/2005

06/06/2006

07/07/2007

08/08/2008

3

12/12/2012

11/11/2011

10/10/2010

1

12/12/1919

**Test Output To Screen**

06/24/2023

06/25/2023

07/01/2023

07/09/2023

07/15/2023

06/03/2006

06/04/2006

06/10/2006

06/11/2006

06/18/2006

06/25/2006

07/01/2006

07/08/2006

07/08/2023

07/15/2023

08/05/2023

08/27/2023

02/02/2002

04/04/2004

07/07/2007

10/10/2010

**Problem #9**

**60 Points**

**Plate**

**Test Input File**

none

**Test Output To Screen**

####$$####

##OOOOOO##

#OoOOO$oO#

$ooooOooo#

Oooo$$oOO$

OoooO$oOO$

$oooooooo#

#oooOOOo$#

##Ooooo$##

###$O$####

**Problem #10**

**60 Points**

**Security**

**Test Input File**

10

MightyMouse12

My Guy

12345

12345aBm?-\_

GoodPassword25

Badpass

alllowercase

ALLUPPERCASE

12312312315

AIOEToij32oign09203

**Test Output To Screen**

thumbs up

thumbs down

thumbs down

thumbs up

thumbs up

thumbs down

thumbs down

thumbs down

thumbs down

thumbs up

**Problem #11**

**60 Points**

**Scramble**

**Test Input File**

10

guard

told

hot

laura

ryan

seven

lift

money

happy

blood

**Test Output To Screen**

urgda urgad urdga urdag uragd

told todl tlod tldo tdol

toh tho oth oht hto

urlaa urala uraal ulraa ulara

yrna yran ynra ynar yarn

vsnee vsene vseen vnsee vnese

tlif tlfi tilf tifl tfli

yonme yonem yomne yomen yoenm

yppha yppah yphpa yphap ypaph

ooldb oolbd oodlb oodbl oobld

**Problem #12**

**60 Points**

**Incline**

**Test Input File**

10

1

2

3

4

5

6

7

8

9

10

**Test Output To Screen**

#

#

##

#

##

###

#

##

###

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