A+ Computer Science

**Computer Science Competition**

Judges Packet

**Problem #1**

**60 Points**

**Minecraft II**

**Test Input File**

40 14

1 Dispenser: 1 Bow, 1 Redstone\_Dust, 7 Cobblestone

1 Bow: 3 Stick, 3 String

2 Stick: 3 Wood\_Plank

4 Wood\_Plank: 1 Wood

1 Piston: 1 Redstone\_Dust, 3 Wood\_Plank, 1 Iron\_Ingot, 4 Cobblestone

1 Sticky\_Piston: 1 Piston, 1 Slimeball

1 Minecart: 5 Iron\_Ingot

1 Hopper: 1 Chest, 5 Iron\_Ingot

1 Chest: 8 Wood\_Plank

1 Hopper\_Minecart: 1 Hopper, 1 Minecart

1 Crossbow: 3 Stick, 2 String, 1 Iron\_Ingot, 1 Tripwire\_Hook

1 Tripwire\_Hook: 1 Stick, 1 Wood\_Plank, 1 Iron\_Ingot

1 Enchanting\_Table: 4 Obsidian, 2 Diamond, 1 Book

1 Book: 3 Leather, 1 Paper

3 Paper: 3 Sugar\_Cane

1 Lantern: 8 Iron\_Nugget, 1 Torch

4 Torch: 1 Coal, 1 Stick

1 Stone: 1 Cobblestone

1 Redstone\_Torch: 1 Redstone\_Dust, 1 Stick

1 Redstone\_Repeater: 3 Stone, 2 Redstone\_Torch, 1 Redstone\_Dust

1 Redstone\_Comparator: 3 Stone, 3 Redstone\_Torch, 1 Quartz

9 Iron\_Nugget: 1 Iron\_Ingot

1 Lever: 1 Stick, 1 Cobblestone

1 Jukebox: 1 Diamond, 8 Wood\_Plank

1 Bookshelf: 3 Book, 6 Wood\_Plank

1 Lectern: 4 Wood\_Slab, 1 Bookshelf

6 Wood\_Slab: 3 Wood\_Plank

6 Stone\_Slab: 3 Stone

6 Cobblestone\_Slab: 3 Cobblestone

1 Time\_Machine: 1 Painting, 2 Compass, 6 Observer, 2 Diamond\_Set, 9 Bookshelf, 1 Lectern, 1 Jukebox, 1 Enchanting\_Table, 5 Redstone\_Dust, 7 Iron\_Ingot, 1 Hopper\_Minecart, 4 Crossbow, 12 Wood\_Plank, 6 Sticky\_Piston, 4 Lantern, 2 Redstone\_Repeater, 3 Redstone\_Comparator, 2 Lever

1 TNT: 5 Gunpowder, 4 Sand

1 Compass: 4 Iron\_Ingot, 1 Redstone\_Dust

1 Diamond\_Chestplate: 8 Diamond

1 Diamond\_Sword: 1 Stick, 2 Diamond

1 Diamond\_Helmet: 5 Diamond

1 Diamond\_Boots: 4 Diamond

1 Diamond\_Pants: 7 Diamond

1 Diamond\_Set: 1 Diamond\_Pants, 1 Diamond\_Helmet, 1 Diamond\_Chestplate, 1 Diamond\_Boots, 1 Diamond\_Sword

1 Observer: 6 Cobblestone, 2 Redstone\_Dust, 1 Quartz

1 Painting: 8 Stick, 1 Wool

Wood 5 1

3 Wood

Dispenser 3 4

4 Wood

4 String

12 Cobblestone

6 Redstone\_Dust

Sticky\_Piston 4 2

2 Slimeball

6 Iron\_Ingot

Hopper\_Minecart 1 1

4 Iron\_Ingot

Diamond\_Set 7 2

30 Diamond

10 Stick

Lectern 3 4

30 Leather

100 Sugar\_Cane

30 Wood

10 Diamond

Observer 7 1

7 Observer

Cobblestone\_Slab 212 1

30 Cobblestone

Crossbow 7 3

2 Tripwire\_Hook

7 String

6 Wood\_Plank

Time\_Machine 1 6

10 Diamond

10 Wood

10 Redstone\_Dust

10 Iron\_Ingot

10 Stone

10 Cobblestone

Paper 300000 0

Stick 300000 0

TNT 40000 2

100000 Sand

500000 Gunpowder

Redstone\_Repeater 3 4

4 Stone

5 Cobblestone

3 Wood

9 Redstone\_Dust

**Test Output To Screen**

2 Wood

9 Cobblestone, 5 String

16 Cobblestone, 4 Redstone\_Dust, 2 Slimeball, 3 Wood

6 Iron\_Ingot, 2 Wood

152 Diamond, 1 Wood

All Supplies in Inventory.

All Supplies in Inventory.

78 Cobblestone

12 Iron\_Ingot, 7 String, 11 Wood

**//this is all one case**

1 Coal, 57 Cobblestone, 45 Diamond, 33 Iron\_Ingot, 93 Leather, 4 Obsidian, 9 Quartz, 30 Redstone\_Dust, 6 Slimeball, 8 String, 33 Sugar\_Cane, 35 Wood, 1 Wool

300000 Sugar\_Cane

112500 Wood

60000 Sand

All Supplies in Inventory.

**Problem #2** Sketch

**Test Input File**

1 5 3 true

4 3 2 false

0 4 0 false

1 8 0 false

0 8 1 false

2 8 2 false

3 8 3 false

4 8 4 false

1 8 0 true

0 8 1 true

2 8 2 true

3 8 3 true

4 8 5 true

1 1 1 false

**Test Output To Screen**

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**Problem #3**

**Minecraft I**

**Test Input File**

18

5 6 7 false

..S.ss

ssssss

ssss.#

WWW..#

O....H

8 8 10 true

S..sss.G

..WWssss

ssssWW##

ffffWWWW

ffffbWWW

ffffWWWW

ffff...p

H....p.O

8 8 3 false

S.......

........

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.......O

8 8 3 false

S.......

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H......O

8 8 2 false

S.......

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H......O

8 8 10 false

S...G...

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.......G

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G......O

8 8 10 false

S...G...

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.......G

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b......O

8 8 3 true

Ssssssss

ssssssss

ssssssss

ssssssss

ssssssss

ssssssss

ssssssss

HssssssO

8 8 3 false

Ssssssss

ssssssss

ssssssss

ssssssss

ssssssss

ssssssss

ssssssss

HssssssO

3 7 3 true

ppppppp

SsssssO

ppppppp

3 7 3 false

ppppppp

S.....O

ppppppp

3 7 3 false

#######

SsssssO

#######

3 7 3 true

#######

SssWssO

#######

5 6 3 false

Sfffff

ffffff

ffffff

ffffff

fffffO

5 6 4 false

Sfffff

ffffff

ffffff

ffffff

fffffO

6 6 3 false

S.....

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.....O

6 6 2 false

O..WWW

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WWW...

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.H...S

12 12 6 true

OffffWW..Hss

fffffWWp.sss

fffff...ssss

bffffWWWssss

fffff#......

######......

WWWWWWGW....

WWWWWWWWW...

WWWWWHW.....

WWWWW.......

WWWWWWWWWWW.

S...........

**Test Output To Screen**

Nether gonna give you up.

Anether one.

Anether one.

Nether gonna give you up.

Anether one.

Anether one.

Nether gonna give you up.

Nether gonna give you up.

Anether one.

Nether gonna give you up.

Anether one.

Anether one.

Anether one.

Anether one.

Nether gonna give you up.

Anether one.

Nether gonna give you up.

Nether gonna give you up.

**Problem #4**

**60 Points**

**License and Registration**

**Test Input File**

10

Alfred Jones

Nomis Dorris

Maggie Wallace III

Betty Crenshaw

Alice May

Theodore Roosevelt

Harry Truman

Super Awesome Hero Guy

Richard Branson

Timothy

**Test Output To Screen**

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

\* Alfred Jones \*

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

\* Nomis Dorris \*

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

\* Maggie Wallace III \*

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

\* Betty Crenshaw \*

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\* Alice May \*

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\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

\* Theodore Roosevelt \*

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\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

\* Harry Truman \*

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\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

\* Super Awesome Hero Guy \*

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

\* Richard Branson \*

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

\*\*\*\*\*\*\*\*\*\*\*

\* Timothy \*

\*\*\*\*\*\*\*\*\*\*\*

**Problem #5**

**60 Points**

**Roundabout**

**Test Input File**

10

1 580

2 650

3 7000

4 2

5 3

6 56789

7 234

10 23434

100 234241

5 234234

**Test Output To Screen**

182

324

45

211200

176000

11

3158

45

45

2

**Problem #6**

**60 Points**

**Redlight**

**Test Input File**

10

20 30 6

20 30 5

10 15 2

60 70 10

60 70 5

78 23 4

234 1000 17

234 1000 500

1 1 0

1 1 1

**Test Output To Screen**

no

yes

yes

no

yes

no

yes

no

yes

no

**Problem #7**

**60 Points**

**Eggs**

**Test Input File**

11

3 5

00\_\_0

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0\_00\_

2 6

000\_00

0\_00\_0

1 12

00\_000\_00\_00

1 12

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4 4

0\_\_0

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10 10

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12 1

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1 1

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2 2

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5 5

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3 3

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**Test Output To Screen**

6

6

3

12

2

26

4

1

3

13

0

**Problem #8**

**60 Points**

**Cyclist**

**Test Input File**

10

1

9

9

2

9

5

2

9

3

9

**Test Output To Screen**

[one,nine]

[nine]

[two,nine]

[two,five,nine]

[three,nine]

**Problem #9 Farmboy**

**Test Input File**

10 4

durian peanut pear avocado

apple

banana

durian

ice

peanut

avocado

cheese

pineapple

guava

toast

**Test Output To Screen**

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le\*

app

\*\*\*

ana

ban

SHIPMENT DISAPPROVED

e\*

ic

SHIPMENT DISAPPROVED

SHIPMENT DISAPPROVED

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che

ple

eap

pin

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va\*

gua

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st\*

toa

**Problem #10**

**60 Points**

**Race**

**Test Input File**

8

4 4

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\*#@\*

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4 4

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5 3

\*\*#\*\*

\*\*@\*\*

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6 4

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\*##\*\*\*

\*\*#@\*\*

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3 3

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\*@\*

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4 4

\*#\*\*

\*#\*\*

##@\*

\*\*\*\*

8 3

\*\*\*\*\*\*\*\*

\*####@#\*

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6 4

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**Test Output To Screen**

OUTSTANDING. I can escape from my predicament

OH NO. I am very stuck and must call for help

OUTSTANDING. I can escape from my predicament

OH NO. I am very stuck and must call for help

OH NO. I am very stuck and must call for help

OUTSTANDING. I can escape from my predicament

OUTSTANDING. I can escape from my predicament

OUTSTANDING. I can escape from my predicament

**Problem #11**

**60 Points**

**City Planning**

**Test Input File**

10

14 4

14 3

30 1

2 1

10 4

8 5

7 6

30 7

12 8

14 2

**Test Output To Screen**

outstanding work gentlemen

outstanding work gentlemen

this is the worst of all possible worlds

this is the worst of all possible worlds

outstanding work gentlemen

outstanding work gentlemen

outstanding work gentlemen

outstanding work gentlemen

outstanding work gentlemen

this is the worst of all possible worlds

**Problem #12**

**60 Points**

**DMV**

**Test Input File**

sum smoth

sam smith

binjomenn anndirsunn

benjamin anderson

jameson braun

james brown

donald blake

blake donald

ronald donald

donald johnson

ronald ronald

ronald ronald

happy birthday

merry christmas

able cain

ability canola

fifteen minutes

fifty men

sabre saber

saber sabre

alligator jimminycricketssalidsoup

whatburge whatisgoingonwiththisthing

A A

B B

A A

A A

apluscompsciisthebest aplucompsciisthebest

aplusfunzoneisthebest aplusfunzoneisthebest

**//this is the first line of this test case – open up the data file**

123456789012345678901234567890111111111111111111111111111 123456789012345678901234567890111111111111111111111111111

**//this is the second line of this test case – open up the date file**

123456789012345678901234567890888888888888888888888888888 123456789012345678901234567890999999999999999999999999999

**Test Output To Screen**

2

8

4

10

6

0

11

8

8

4

31

2

0

15

54