

A+ Computer Science

January 2013 –Packet 2

Computer Science Competition

Hands-On Programming Set

Judges Packet

Number	Name
Problem 1	Killer Bunny
Problem 2	Knights Who Say Ni
Problem 3	The Quest For The Holy Grail
Problem 4	Bring Out Yer Dead!
Problem 5	The Bridge Of Death
Problem 6	The French
Problem 7	Witch!
Problem 8	The Black Knight
Problem 9	Fetch Me A Shrubbery!
Problem 10	Where Is It?
Problem 11	The Hour Is Upon Us
Problem 12	One...two...five!

1. Killer Bunny

Data File name: none

Judges Output to screen:

```

66666666666666666666666666666666
66666666666/|666666__666666
66666666666/ |666,-~ /666666
6666666666Y :|66// /666666
6666666666| |6/( .^66666666
6666666666>-"~"-v/6666666666
66666666/ Y6666666666
6666666j o o |6666666666
66666( ~T~ j6666666666
6666666>.'-\'_./6666666666
666666/ "~" |6666666666
6666Y _/ |6666666666
666/| ;-"~_ 1666666666
66/ 1/ ,-"~ \6666666666
66\\//\\/ .- \6666666666
666Y / Y*666666
666l I !66666666
666]\ \ /"\666666
66(" ~----( ~ Y. )6666
66666666666666666666666666666666

```

2. Knights Who Say Ni

Input: knights.dat

Judges Data:

7

Ben: Ni, Ni, Ni, You know that can't be right, George.

George: Yes, but I see no flaw! Ni!

Ben: Ni, Ni, Ni, Ni, Ni, Nay good sir! Ni! Ni! Ni!

George: I'm right, quit arguing! Ni!

Ben: Never. Ni! Ni! Ni!

Jonnah: Why are you saying that? It's annoying!

Ben: Ni! Ni! Ni! Ni! We are the Knights Who Say Ni!

-

Jonnah: Whatever, loser. Go dwell in your forrest.

George: Don't make fun of my friend! Knights Who Say Ni are just fine!

Jonnah: Your mother was a hamster, and your father smelt of elderberries!

George: You take that back!!

Jonnah: You are just as good as them. Terrible.

-

Ben: Quit your bickering, Ni, Ni, Ni, Ni!

Jonnah: I have no time to deal with your nonsense, Ni-Boy.

Ben: You have insulted a Knight, Ni, you shall fetch me something of worth! Ni! Ni! Ni!

George: You show 'em what the Knights Who Say Ni are really about!!

Ben: Ni! Ni! I shall. The time has come where the Knights Who Say Ni will prevail! Ni! Ni! Ni! Ni! Ni! Ni!

-

B: Check to make sure capitilization doesn't matter!

A: ni, ni, ni, ni, Ni, Ni, Ni, Ni, Ni, Ni, Ni, Ni, ni, ni, ni, ni, NI!

Z: Nope.

-

Z: Check to make sure they don't count the name as part of the sentence!

Ni: Not gonna say it!

E: Who has the name Z, anyways?

-

C: Check the inclusion case!

Shaawda: my Niece was a ShiNing star and she's LightNing in the Sky!

-

F: Check the empty case!

G:

T:

-

Judges Output to screen:

Ben is a member of the Knights Who Say Ni.
George is a fan of Knights Who Say Ni.
Jonah does not say Ni.

George is a fan of Knights Who Say Ni.
Jonah does not say Ni.

Ben is a member of the Knights Who Say Ni.
George is a fan of Knights Who Say Ni.
Jonah does not say Ni.

A is a member of the Knights Who Say Ni.
B does not say Ni.
Z does not say Ni.

E does not say Ni.
Ni does not say Ni.
Z does not say Ni.

C does not say Ni.
Shaawda does not say Ni.

F does not say Ni.
G does not say Ni.
T does not say Ni.

3. The Quest for the Holy Grail

Data File name: quest.dat

Judges Data:

10	#####	#####	...##...
.....	#####	#.A..K...#	...##...
..A.....#	#.....#	...##...
.....	#####...#	#.....####
.....K...#.	.....A...#	#.....####	-
.....#.	-	#.....##	#####
#####...#.	A.....	#####...##	A.#####
.....#.	.....	H.....####	#..#####
.....#.	#####...####	##..#####
...H.....#.	.....	#####.#####	###..#####
.....	-	####..####
-	#####	####..###
.....###.	.....	#####A.H##	####K...##
.....	#####	#####...#
.###.....	.....	#####	.....H....
...#.....	.....H	#####	-
...#.....H	-	#####	#####
...#.....	A.....	#####	.....A...
...K.#####	.....	#####	####.####.
.....#	#####	####.####.
.#####...#	#####	####.####.
.....A...#	.....	-	####K####.
-	.....K.....	A...##...H	####.####.
.....###.	.....	...##...	...H.....
.....##...	#.....#
.###.....##...	#####
...#.#####	.....H	...##...	
...#.....H	-	...##...	

Judges Output to screen:

.....	0#####	#.AO.K...#	...0##...0
..A00000..	0.....#	#..00....#	...0##...0
.....0..	0####...#	#...00###	...0000000
.....K.O#.	000000A..#	#...0####	
.....00#.		#...0..##	#####
#####O.#.	A000000000	#####O..##	AO#####
...0000.#.	.....0	H00000####	#00#####
...0....#.	.....0	####..###	#00#####
...H....#.	.....0	####.####	###00#####
.....	.....0		###00####
	.....0	#####	####00####
.....###.	.....0	#####AOH##	####K.O.##
0000000000	.....0	#####	####00..#
0###.....0	.....0	#####	.....H....
0..#.....0	.....H	#####	
0..#.....H		#####	#####
0..#.....	A000000000	#####	.....A000
0..K.####	.....0	#####	####.####0
0.....#	.....0	#####	####.####0
0#####...#	.....0	#####	####.####0
000000A..#	.....0		####K####0
	....K....0	A000##...H	####.####0
.....###.	.....0	...0##...0	....H00000
00000.....	.....0	...0##...0	#.....#
0###0.....	.....0	...0##...0	#####
0..#0####	.....H	...0##...0	
0..#00000H		...0##...0	
0#####	#####	...0##...0	

4. Bring Out Yer Dead!

Data File name: notdead.dat

Judges Data:

```
4
<nothing>
I'm not dead yet!
I'm not dead yet!
<nothing>
```

Judges Output to screen:

```
Accepted
Rejected
Rejected
Accepted
```

5. The Bridge of Death

Data File name: bridge.dat

Judges Data:

What is your name? Sir Robin
What is your favorite color? Red
What weighs the same as a duck? A witch
What is your quest? To seek the Holy Grail
Who is King of the Britons? Sir Arthur
Who keeps the Holy Hand Grenade? Brother Maynard
What is the frozen land? Nador
What is the surface are of a brick? 79cm squared
What does Karoke mean in Japanese? empty orchestra
How many hours a day do cats sleep? 16 - 18 hours
What is the fear of teeth? Odontophobia
Who is the bravest Knight of them all? Sir Robin
What is the most money ever paid for a cow in auction? 1.3 million pounds
Which king of cards does not have a mustache? The King of Hearts
What is the only mammal that can't jump? Elephants
What textile are the Austriallian \$100 note made of? plastic
What percentage of atoms in your body are replaced every year? 98%
Which do you burn more calories at sleeping or watching tv? sleeping
What was the first product to have a barcode? Wrigley's Gum
Which season do children grow fastest in? Spring
At what number are the measurements of Celcius and Farenheit equal? -40
How many toothpicks can be created from a cord of wood? 7.5 million
What are the things at the end of shoelaces called? Aglets
What was the occupation of Charlie Brown's father? A barber.
What is stressed spelled backwards? Desserts
What is the name of the tone that American car horns are in? F
What 3 western names are most known in China? Jesus Christ, Richard Nixon, and Elvis Presley
Who was the fastest public speaker in the world? President Kennedy
What was a bagpipe made of in Middle Ages? Skin of sheep
Which car gets more miles per gallon, stick or automatic? Stick
How many sesame seeds on average are there on a McDonalds BigMac bun? 178
Who knows who built the Taj Mahal? No one
How far can a skunk spray? 10 feet
What family are Almonds a member of? Peach
What direction do bats turn when leaving a cave? left
How many eyelids do camels have? 3
What would Beethoven do when he sat to write music? pour water over his head
Which month in recorded history did not have a full moon? February 1865
What mammal has no vocal cords? Giraffes
What human bone is harder than concrete? Femur
Which side of a coin is more likely, heads or tails? tails
What country bans cheating on grades by law and jailtime? Bangedesh
Who invented scissors? Leonardo Di Vinci
What is Los Angeles's full name? El Pueblo de Nuestra Senora la Reina de los Angeles de Porciuncula
What American State has a one syllable name? Maine
What color of tooth brush is preferred most? Blue
Is non-dairy creamer flammable? Yes
What percentage of bones are in your feet? 25%
How long does it take the average person to fall asleep? 7 minutes
How many times per day does the average human laugh? 15 times
5
What is the name of the tone that American car horns are in?
What 3 western names are most known in China?
What color of tooth brush is preferred most?
What percentage of bones are in your feet?
What is the capital of Assyria?
What human bone is harder than concrete?
What is your name?
Which month in recorded history did not have a full moon?

What mammal has no vocal cords?
What is the average flight speed of a laded swallow?
What is your favorite color?
Where is your home?
How far can a skunk spray?
What family are Almonds a member of?
How many eyelids do camels have?
Who invented scissors?
What weighs the same as a duck?
Why did the chicken cross the road?

Judges Output to screen:

F.
Jesus Christ, Richard Nixon, and Elvis Presley.
Blue.
Sir Robin can cross the bridge.

25%.
Sir Robin gets thrust into the pit.

Sir Robin.
February 1865.
Giraffes.
Sir Robin can cross the bridge.

Sir Robin gets thrust into the pit.

10 feet.
Peach.
3.
Sir Robin can cross the bridge.

Leonardo Di Vinci.
A witch.
Sir Robin gets thrust into the pit.

6. The French

Data File name: french.dat

Judges Data:

```
10
-4 3
3 -4
0 15
0 0
-1 -1
10 10
23556 -54124
-2 0
0 -10
2000 2000
```

Judges Output to screen:

```
Velocity: 7.00357 m/s Angle: 143.13010 degrees
Velocity: 7.00357 m/s Angle: -53.13010 degrees
Velocity: 12.13054 m/s Angle: 90.00000 degrees
Velocity: 0.00000 m/s Angle: 0.00000 degrees
Velocity: 3.72471 m/s Angle: -135.00000 degrees
Velocity: 11.77855 m/s Angle: 45.00000 degrees
Velocity: 760.96233 m/s Angle: -66.48023 degrees
Velocity: 4.42945 m/s Angle: 180.00000 degrees
Velocity: 9.90454 m/s Angle: -90.00000 degrees
Velocity: 166.57392 m/s Angle: 45.00000 degrees
```

7. Witch!

Data File name: witch.dat

Judges Data:

```
10
120.2 120.2
5.2 150.3
5.3 8.2
0 0
100 100
8.8 88
1.00001 1
1 1.0001
5 5.0
-8 -8
```

Judges Output to screen:

```
WITCH!
NOT A WITCH!
NOT A WITCH!
WITCH!
WITCH!
NOT A WITCH!
NOT A WITCH!
NOT A WITCH!
WITCH!
WITCH!
```

8. The Black Knight

Data File name: black.dat

Judges Data:

[illegible]

Judges Output to screen:

[illegible]

9. Fetch Me A Shrubbery!

Data File name: shrubbery.dat

Judges Data:

```
6
3
Shrub1 4 5 7
Shrub2 5 6 6
Shrub3 1 7 5
SIZE
3
Shrub4 4 5 7
Shrub5 5 6 6
Shrub6 1 7 5
PRICE
3
Shrub7 4 5 7
Shrub8 5 6 6
Shrub9 1 7 5
NICE
4
Shrub10 5 5.55559 5.55555
Shrub11 5 5.55551 5.55554
Shrub12 5 5.55552 5.55553
Shrub13 5 5.55553 5.55551
PRICE
4
Shrub10 5 5.55559 5.55551
Shrub11 5 5.55551 5.55552
Shrub12 5 5.55552 5.55553
Shrub13 5 5.55553 5.55554
SIZE
1
Shrub0 100 0 1
NICE
```

Judges Output to screen:

```
Shrub1
Shrub2
Shrub3

Shrub4
Shrub5
Shrub6

Shrub8
Shrub7
Shrub9

Shrub11
Shrub12
Shrub13
Shrub10

Shrub13
Shrub12
Shrub11
Shrub10

Shrub0
```

10. Where is it?

Data File name: where.dat

Judges Data:

RIRSTAY AOUAY NUSTAY YOAY EOAY EHEAY XDGEAY HFAY EHEAY XARTHAY CHEREAY
EHEAY QEAVENSAY NEETAY QELLAY VNDA EURNAY SHEFTAY PESUSAY NUSTAY QAVEAY
EAKENAY EHEAY SAILAY CITHAY QIMAY HNAY QISAY POURNEYAY UACKAY ZFAY AOUAY
LTARTAY QEREAY AOUAY QEADAY MORTHAY RORAY NANYAY TAYSAY VNDA NANYAY
MIGHTSAY VNDA AOUAY CILLAY RINDAY EHSAY ILACEAY VFTERAY EHSAY
POURNEYAY CESTAY UECOMESAY XASTAY VNDA XASTAY ECOMESAY CESTAY EHEREFOREAY
ROLLOWAY EHEAY URIGHTESTAY LTARSAY HFAY EHEAY MIGHTAY VNDA LLEEPAY
EHROUGHAY EHEAY QOTAY TAYAY CAITAY RORAY ZTAY EOAY JAINAY EHENAY GRINEAY
VNDA ROLLOWAY EHEAY JAINBOWAY KNTILAY AOUAY JEACHAY VAY SHEPROCHONAY
EHSAY SHEPROCHONAY CILLAY SHEADAY AOUAY EHROUGHAY VAY PUNGLEAY VNDA
TOWNAY VAY EUNNELAY VTAY EHEAY UOTTOMAY HFAY CHICHAY CILLAY QOLDA EHEAY
QOLYAY SAILAY

Judges Output to screen:

FIRST YOU MUST GO TO THE EDGE OF THE EARTH WHERE THE HEAVENS MEET HELL AND
TURN LEFT JESUS MUST HAVE TAKEN THE GRAIL WITH HIM ON HIS JOURNEY BACK IF
YOU START HERE YOU HEAD NORTH FOR MANY DAYS AND MANY NIGHTS AND YOU WILL
FIND THIS PLACE AFTER THIS JOURNEY WEST BECOMES EAST AND EAST BECOMES WEST
THEREFORE FOLLOW THE BRIGHTEST STARS OF THE NIGHT AND SLEEP THROUGH THE
HOT DAY WAIT FOR IT TO RAIN THEN SHINE AND FOLLOW THE RAINBOW UNTIL YOU
REACH A LEPROCHON THIS LEPROCHON WILL LEAD YOU THROUGH A JUNGLE AND DOWN A
TUNNEL AT THE BOTTOM OF WHICH WILL HOLD THE HOLY GRAIL

11. The Hour is Upon Us

Data File name: hour.dat

Judges Data:

```
10
10/12/1993 1
12/31/1993 1
1/1/1001 30
2/1/523 1000000000
2/28/1000 1
10/5/2333 1000
5/23/1000 365
8/31/1 1095
11/11/2011 11
3/14/314 31429
```

Judges Output to screen:

```
Wed 10/13/1993
Sat 1/1/1994
Fri 1/31/1001
Tue 2/5/2738430
Thu 2/29/1000
Wed 7/1/2336
Fri 5/23/1001
Sat 8/30/4
Tue 11/22/2011
Sat 3/31/400
```

12. One... two... five!

Data File name: one.dat

Judges Data:

7
3
6
12
135
5
22
1

Judges Output to screen:

1, 2, 5
1, 2, 5, 4, 5, 5
1, 2, 5, 4, 5, 5, 7, 8, 5, 10, 11, 5
1, 2, 5, 4, 5, 5, 7, 8, 5, 10, 11, 5, 13, 14, 5, 16, 17, 5, 19, 20, 5, 22,
23, 5
, 25, 26, 5, 28, 29, 5, 31, 32, 5, 34, 35, 5, 37, 38, 5, 40, 41, 5, 43,
44, 5, 4
6, 47, 5, 49, 50, 5, 52, 53, 5, 55, 56, 5, 58, 59, 5, 61, 62, 5, 64, 65,
5, 67,
68, 5, 70, 71, 5, 73, 74, 5, 76, 77, 5, 79, 80, 5, 82, 83, 5, 85, 86, 5,
88, 89,
5, 91, 92, 5, 94, 95, 5, 97, 98, 5, 100, 101, 5, 103, 104, 5, 106, 107,
5, 109,
110, 5, 112, 113, 5, 115, 116, 5, 118, 119, 5, 121, 122, 5, 124, 125, 5,
127, 1
28, 5, 130, 131, 5, 133, 134, 5
1, 2, 5, 4, 5
1, 2, 5, 4, 5, 5, 7, 8, 5, 10, 11, 5, 13, 14, 5, 16, 17, 5, 19, 20, 5, 22
1