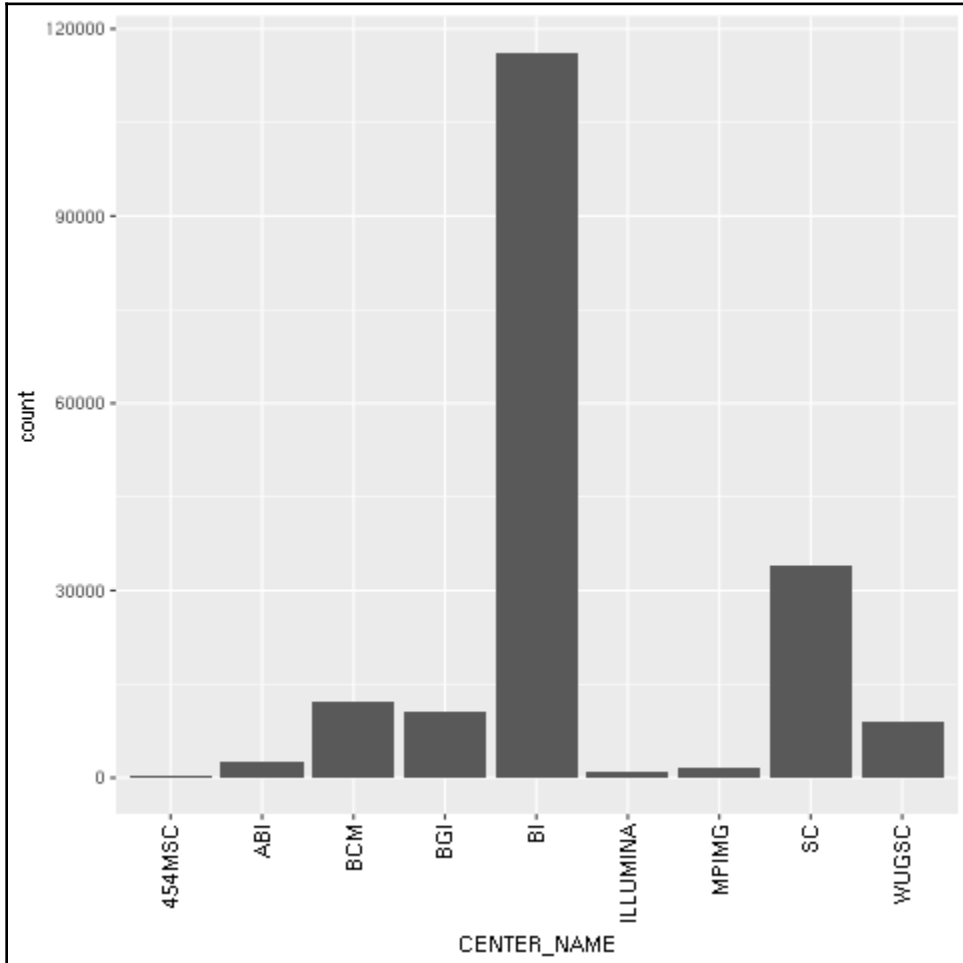
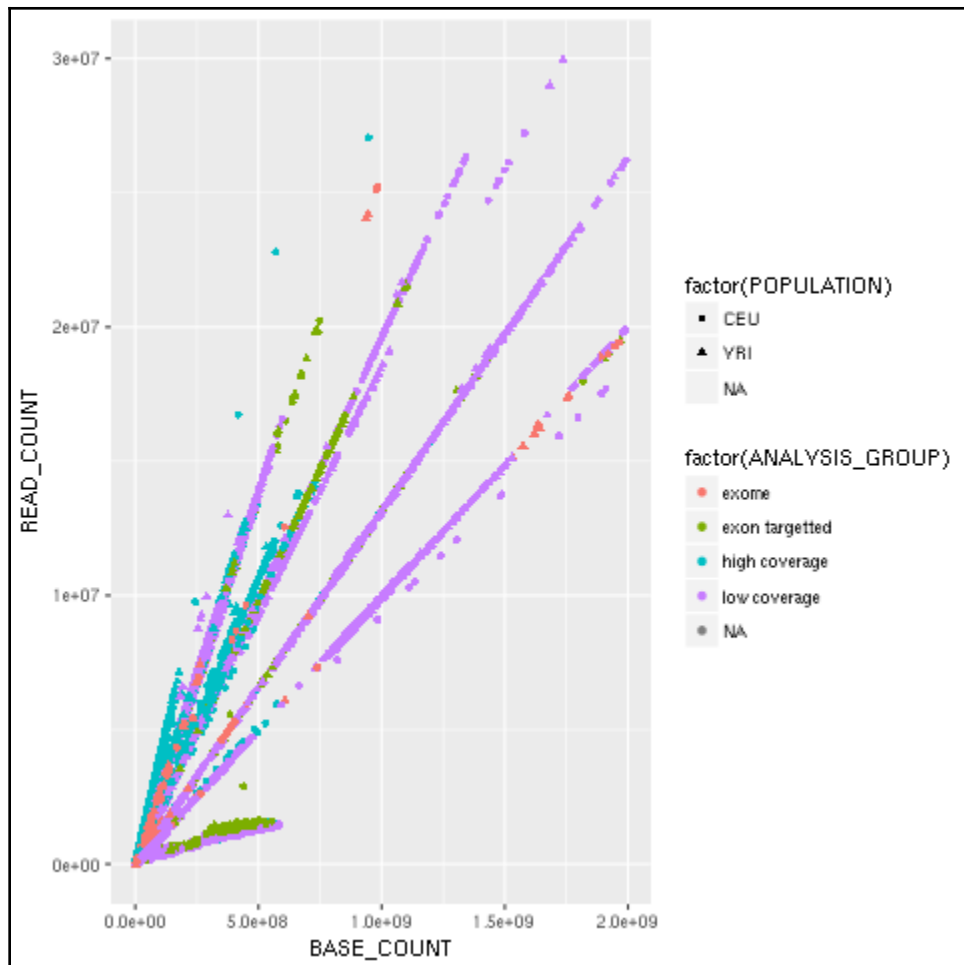
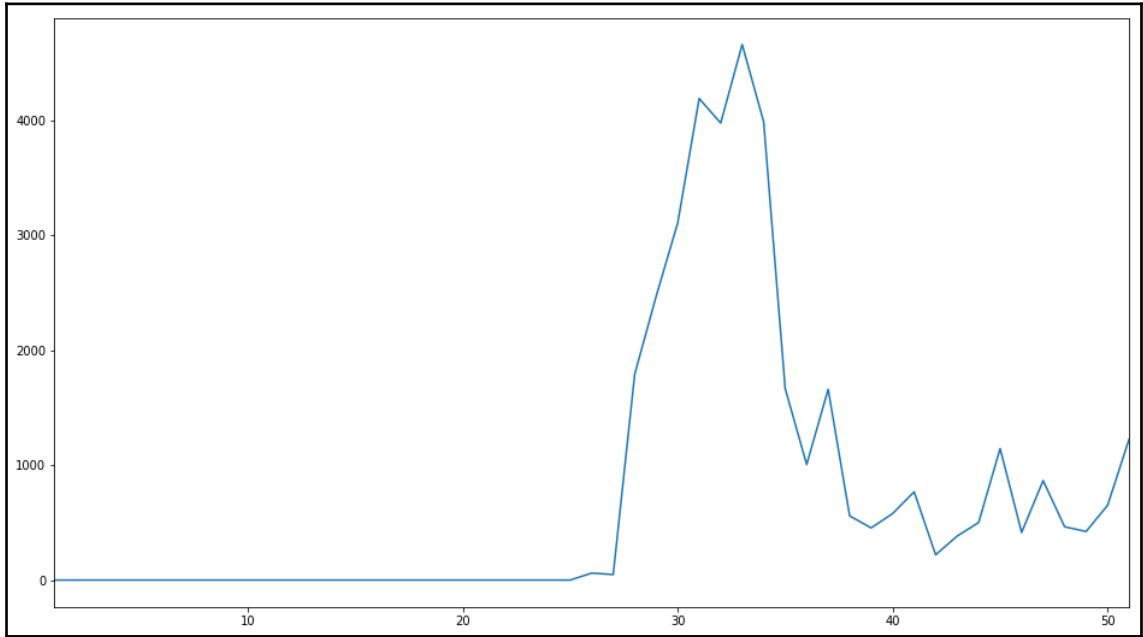


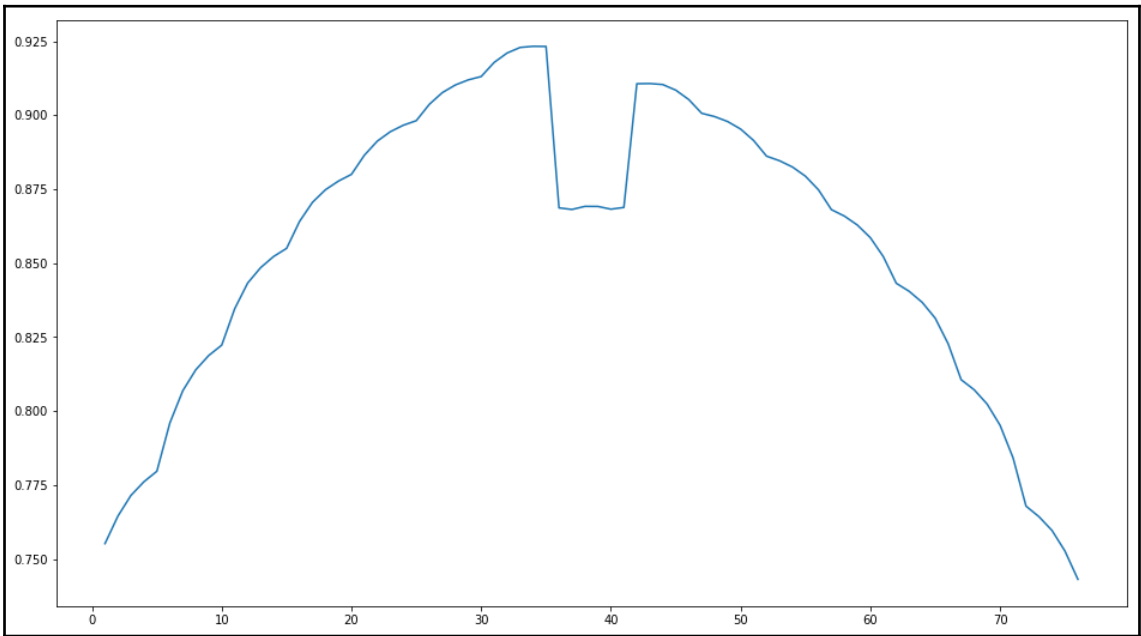
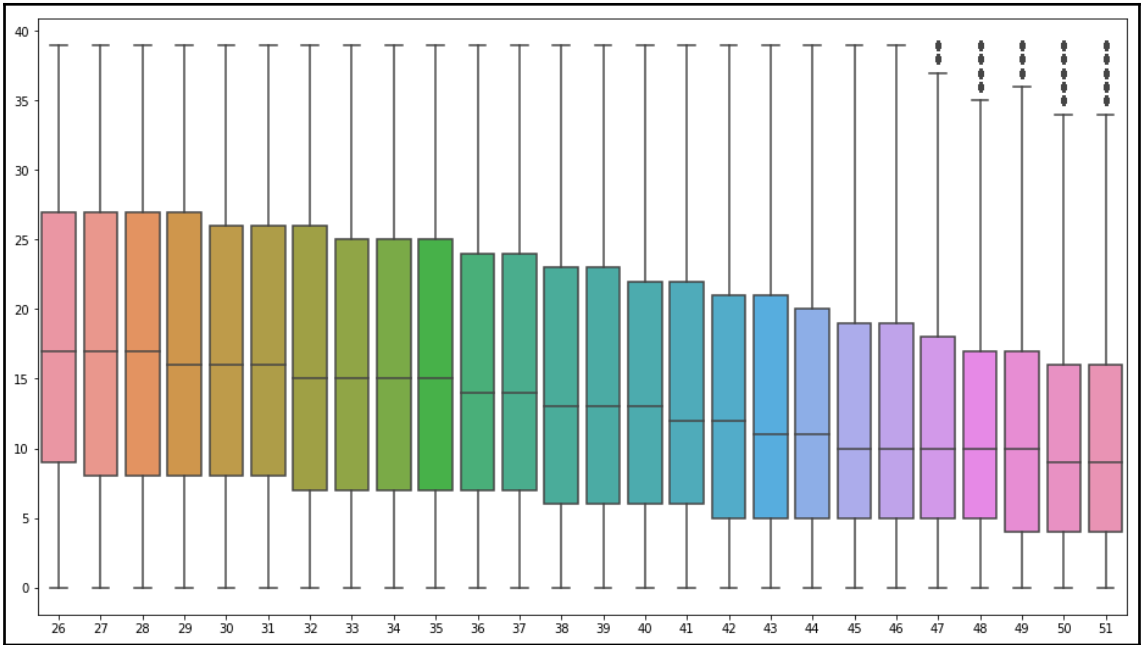
Chapter 1: Python and the Surrounding Software Ecology

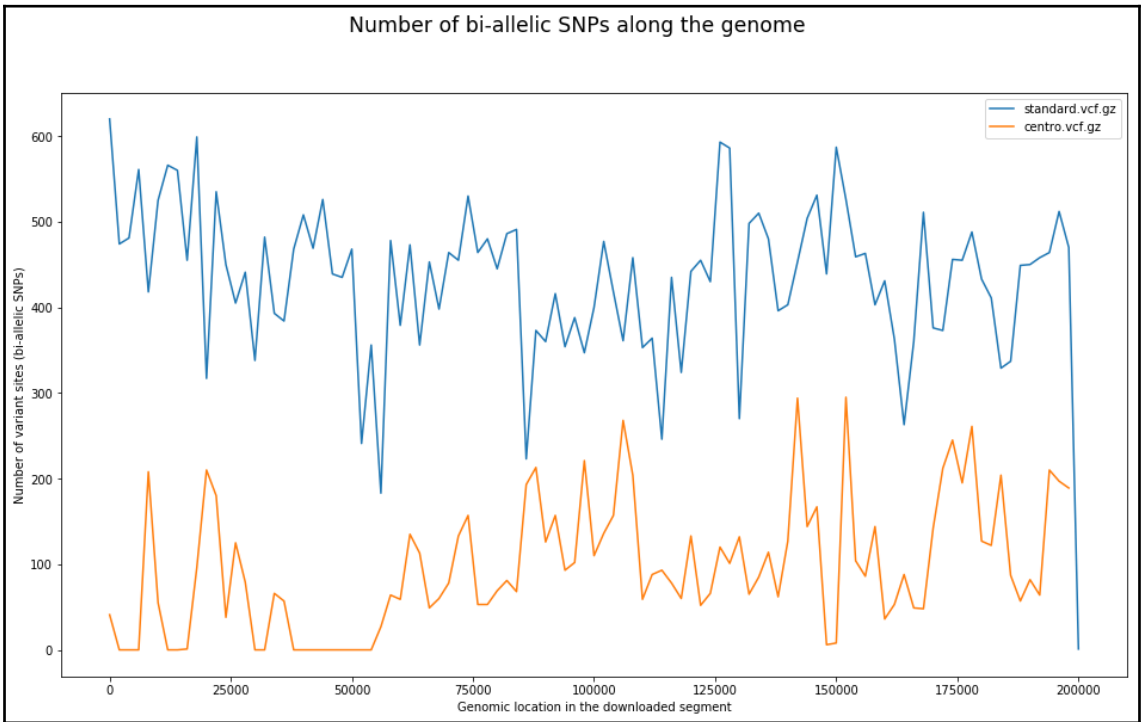
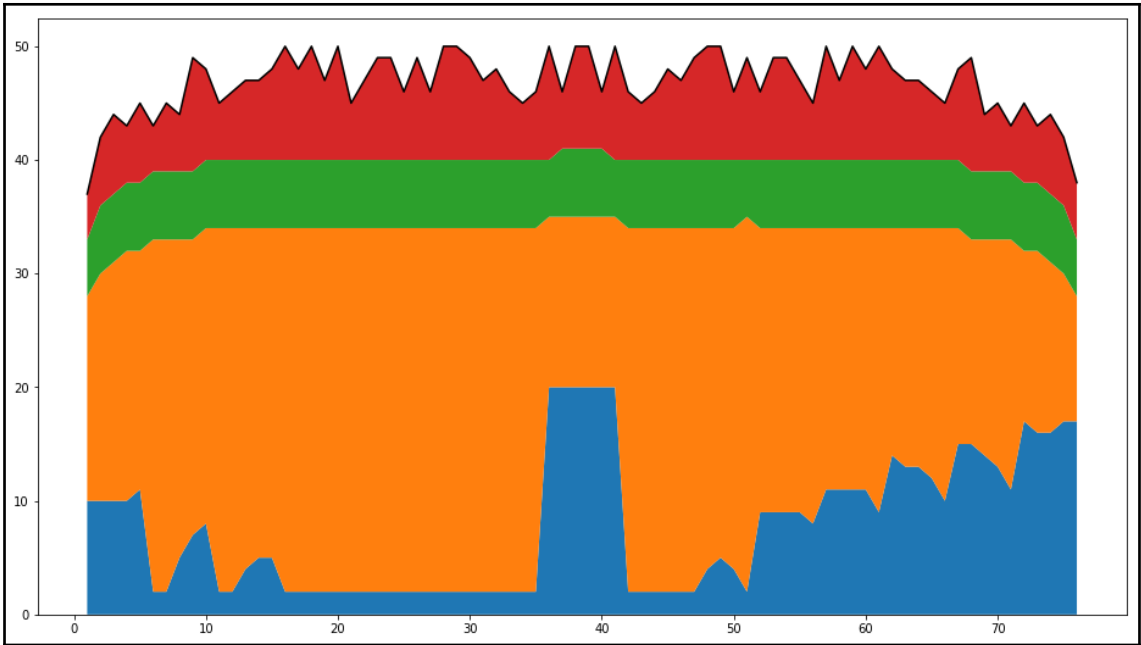


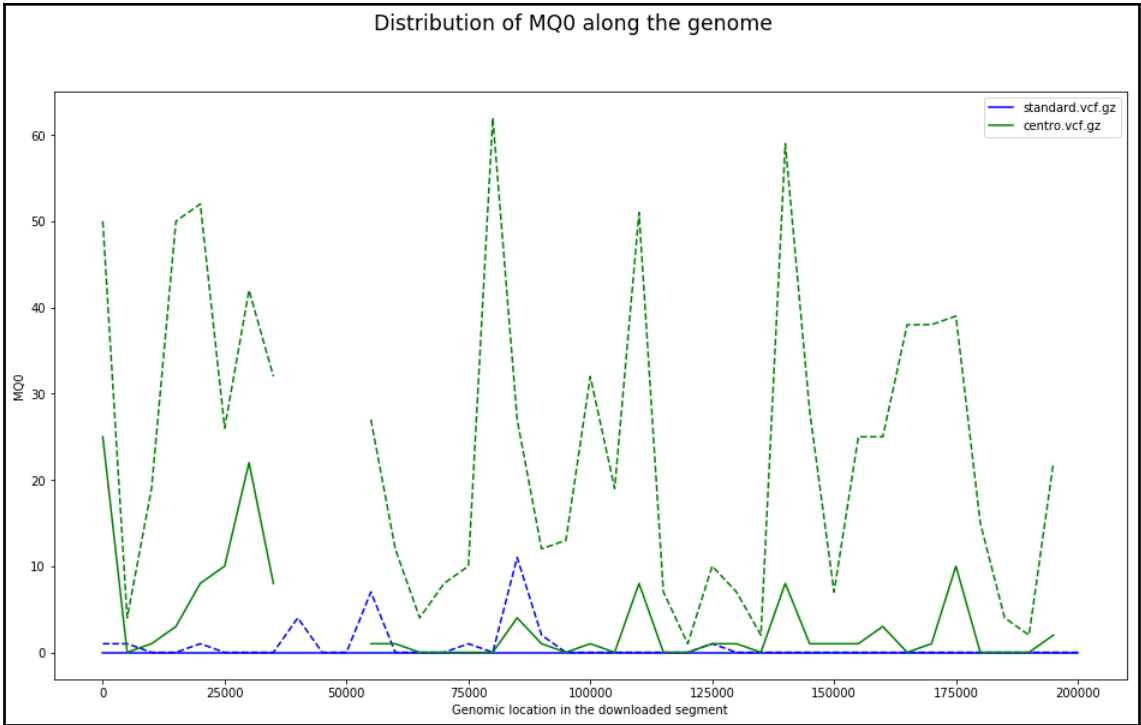


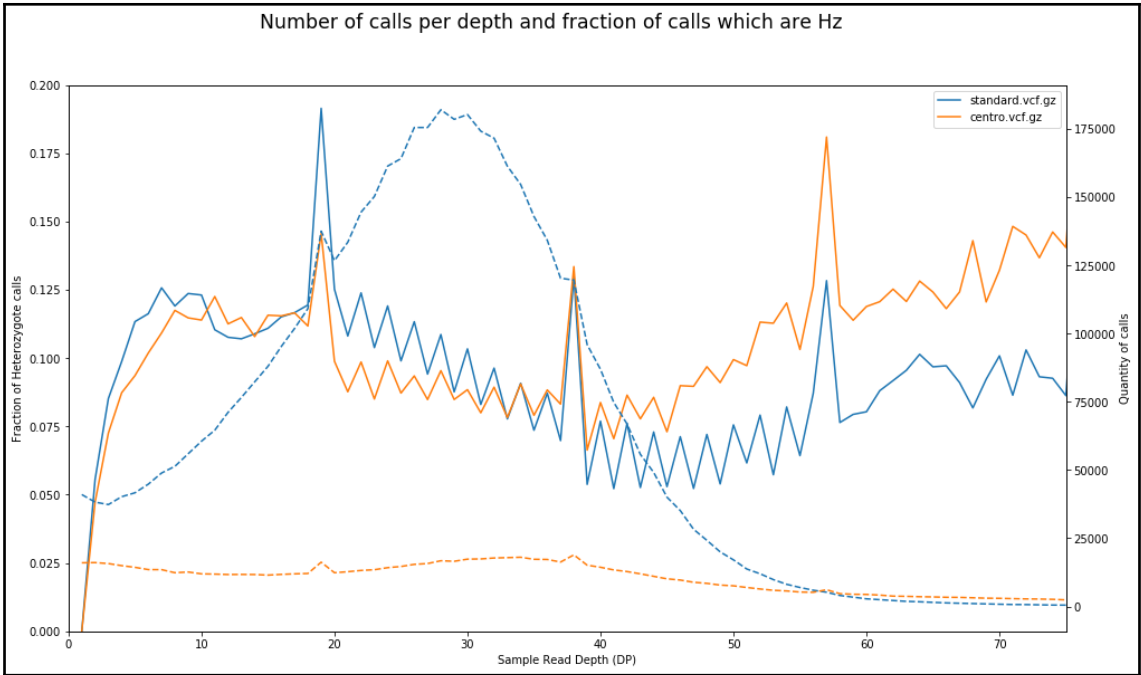
Chapter 2: Next-Generation Sequencing

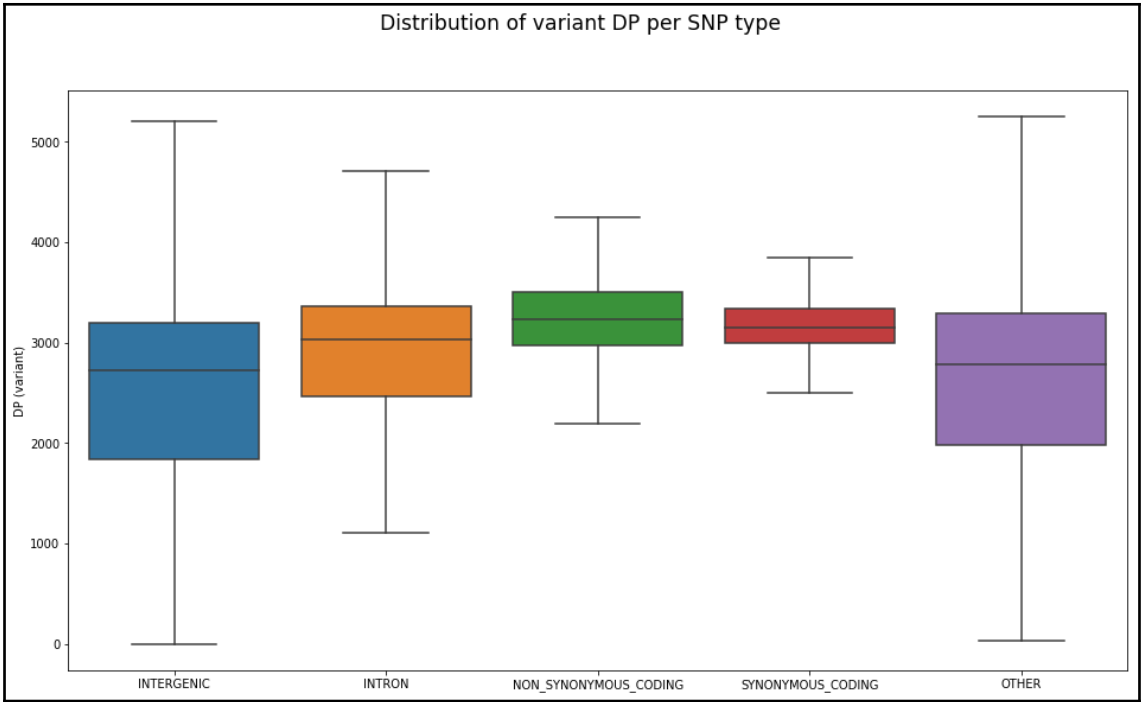






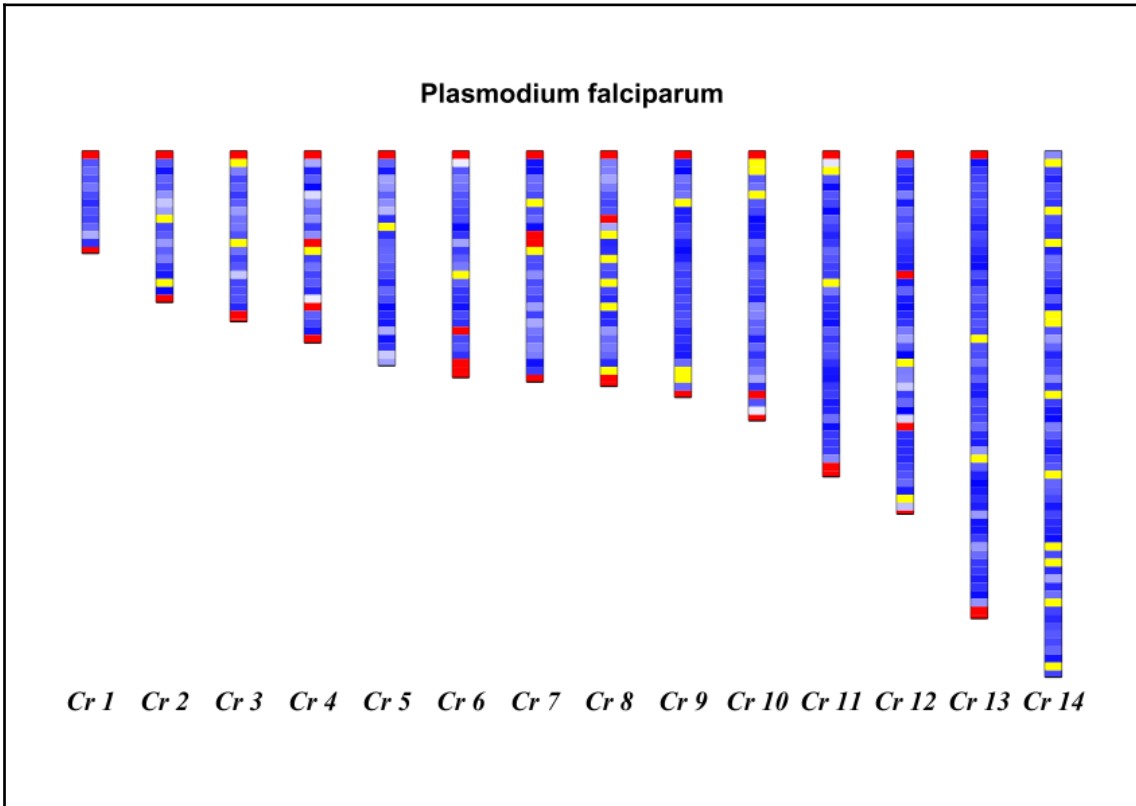


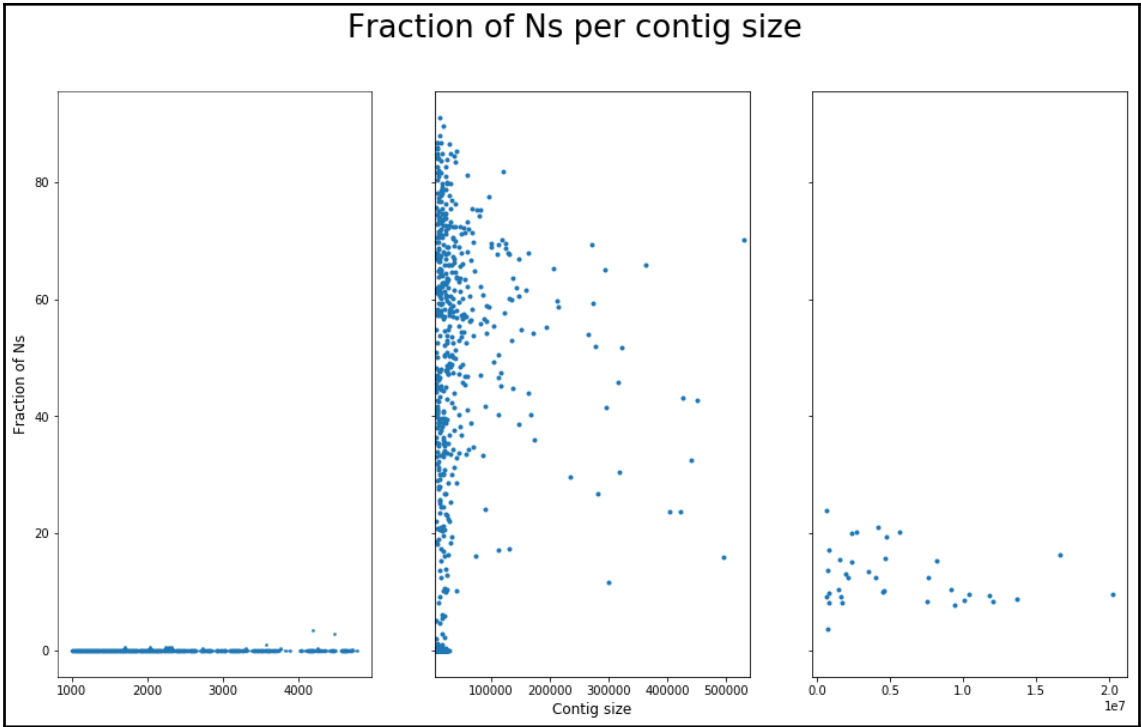


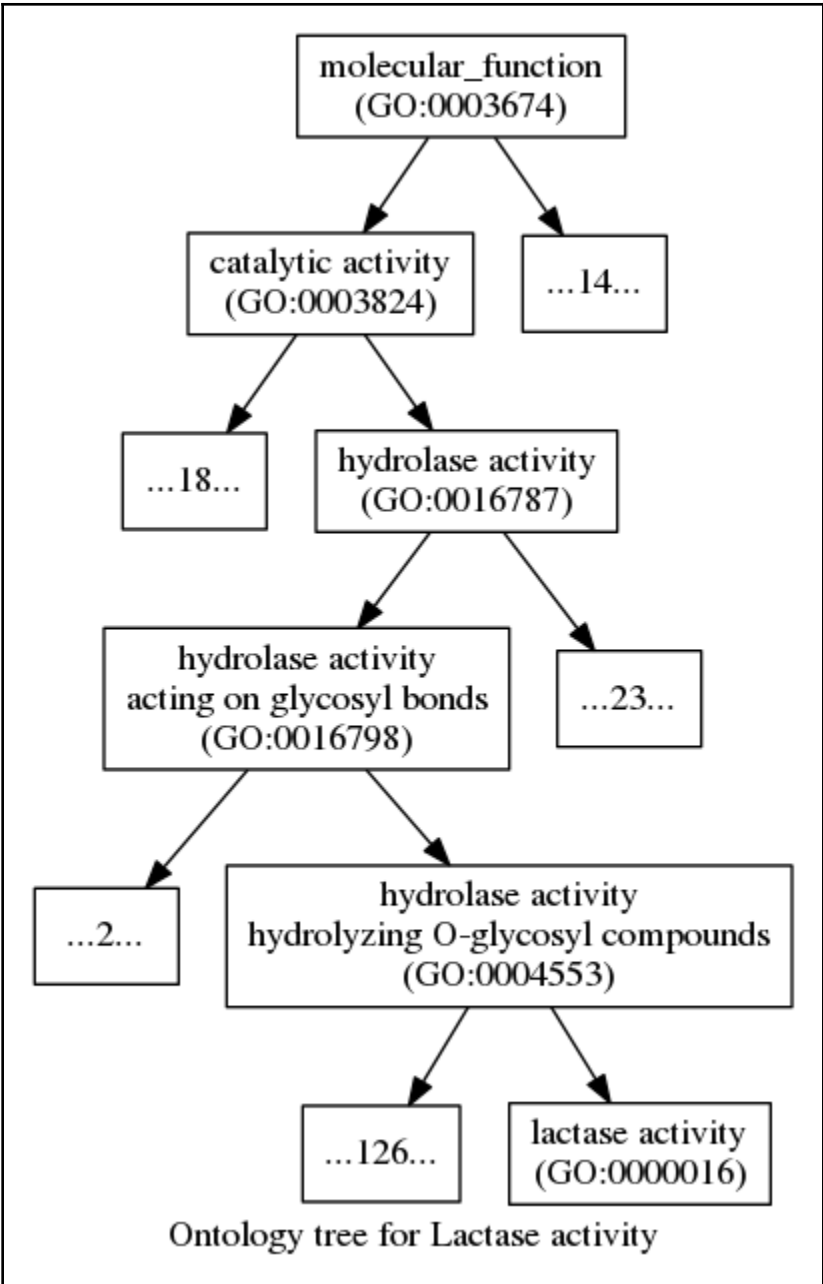


Chapter 3: Working with Genomes

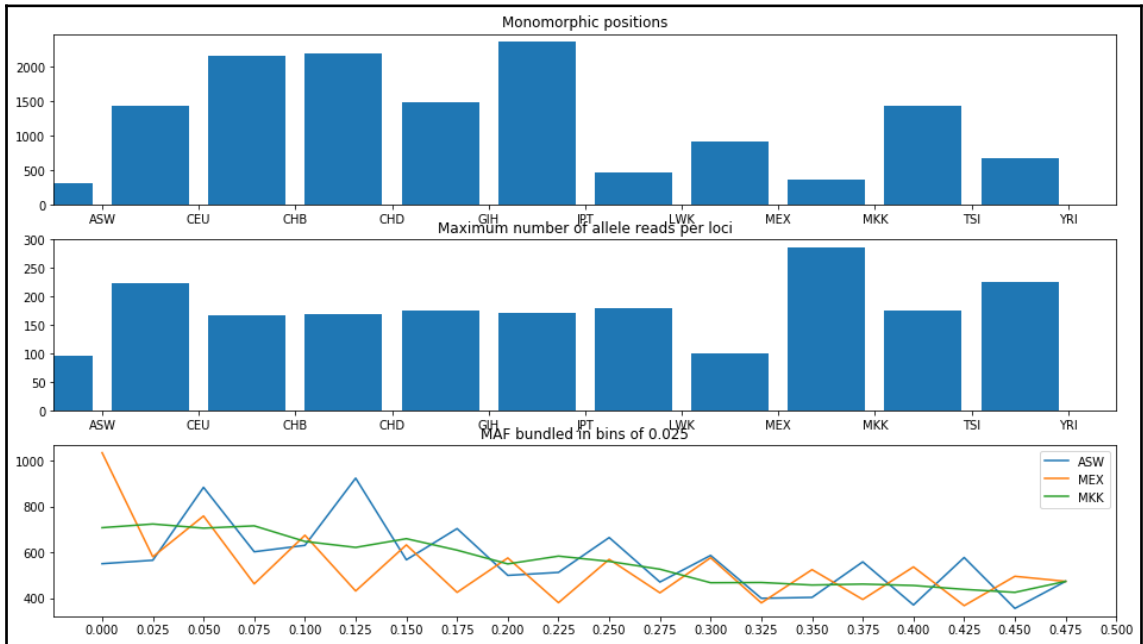
Pf3D7_05_v3	organism=Plasmodium_falciparum_3D7	version=2012-02-01	length=1343557	S0=chromosome
Pf3D7_10_v3	organism=Plasmodium_falciparum_3D7	version=2012-02-01	length=1687656	S0=chromosome
Pf3D7_07_v3	organism=Plasmodium_falciparum_3D7	version=2012-02-01	length=1445207	S0=chromosome
Pf3D7_03_v3	organism=Plasmodium_falciparum_3D7	version=2012-02-01	length=1067971	S0=chromosome
Pf3D7_13_v3	organism=Plasmodium_falciparum_3D7	version=2012-02-01	length=2925236	S0=chromosome
Pf3D7_11_v3	organism=Plasmodium_falciparum_3D7	version=2012-02-01	length=2038340	S0=chromosome
Pf3D7_14_v3	organism=Plasmodium_falciparum_3D7	version=2012-02-01	length=3291936	S0=chromosome
Pf3D7_09_v3	organism=Plasmodium_falciparum_3D7	version=2012-02-01	length=1541735	S0=chromosome
Pf3D7_01_v3	organism=Plasmodium_falciparum_3D7	version=2012-02-01	length=640851	S0=chromosome
Pf3D7_12_v3	organism=Plasmodium_falciparum_3D7	version=2012-02-01	length=2271494	S0=chromosome
Pf3D7_08_v3	organism=Plasmodium_falciparum_3D7	version=2012-02-01	length=1472805	S0=chromosome
Pf3D7_06_v3	organism=Plasmodium_falciparum_3D7	version=2012-02-01	length=1418242	S0=chromosome
Pf3D7_04_v3	organism=Plasmodium_falciparum_3D7	version=2012-02-01	length=1200490	S0=chromosome
Pf3D7_02_v3	organism=Plasmodium_falciparum_3D7	version=2012-02-01	length=947102	S0=chromosome
M76611	organism=Plasmodium_falciparum_3D7	version=2012-02-01	length=5967	S0=mitochondrial_chromosome
PFC10_API_IRAB	organism=Plasmodium_falciparum_3D7	version=2012-02-01	length=34242	S0=apicoplast_chromosome

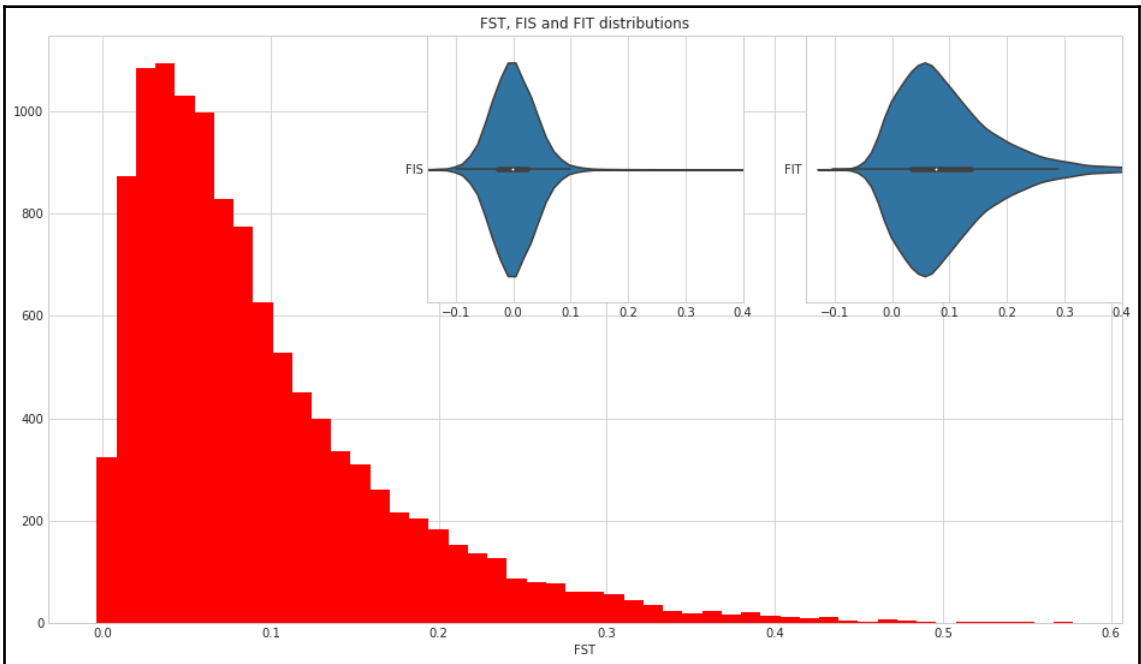
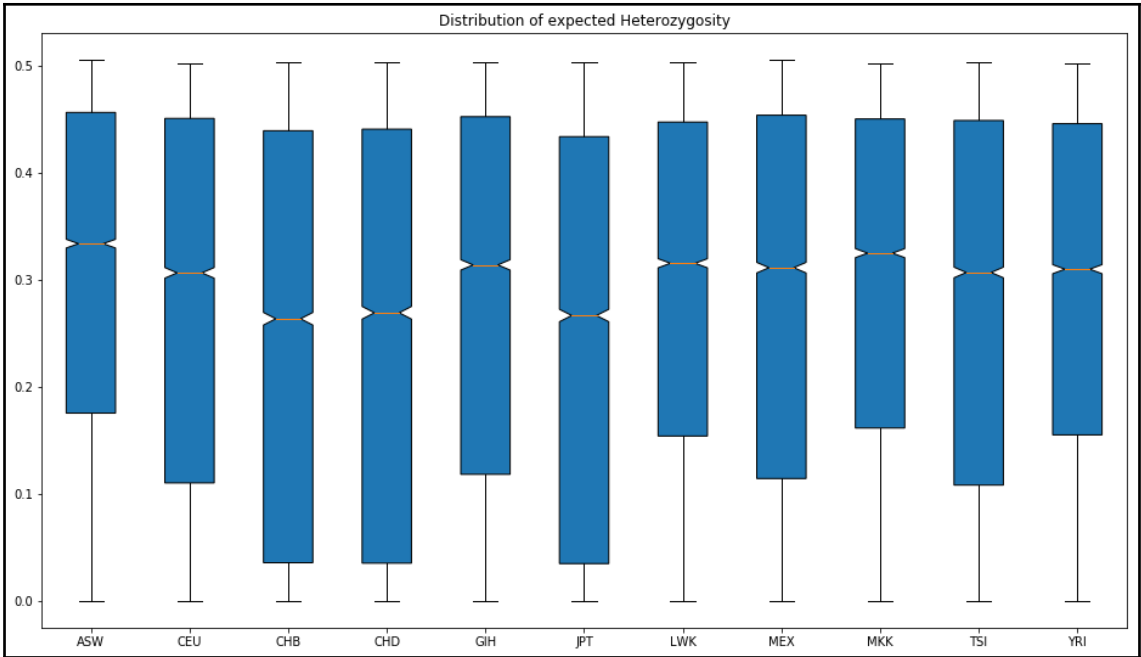




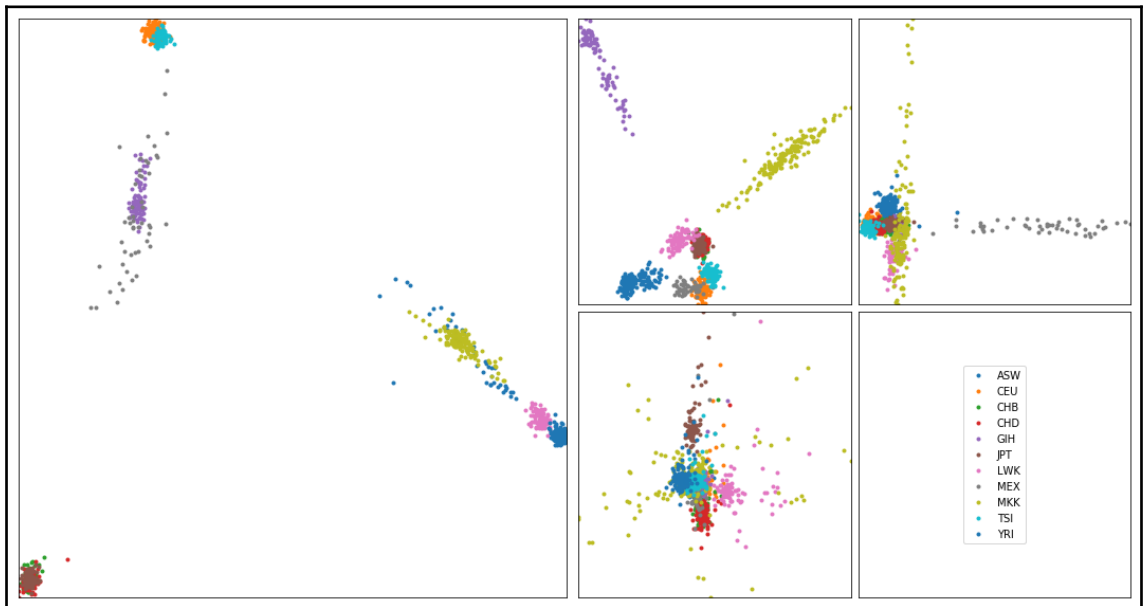
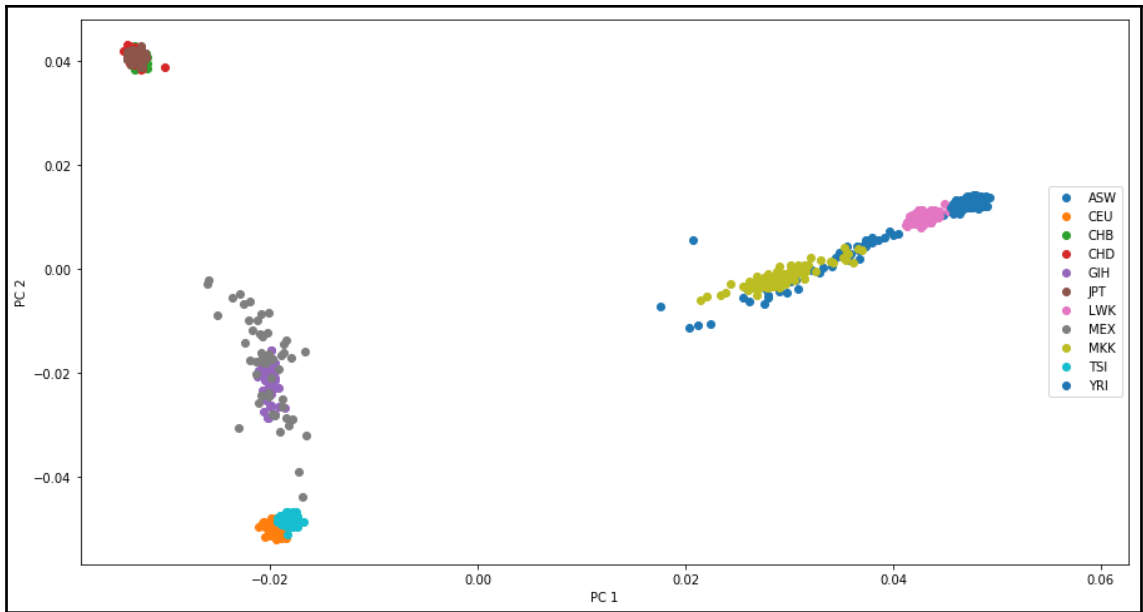


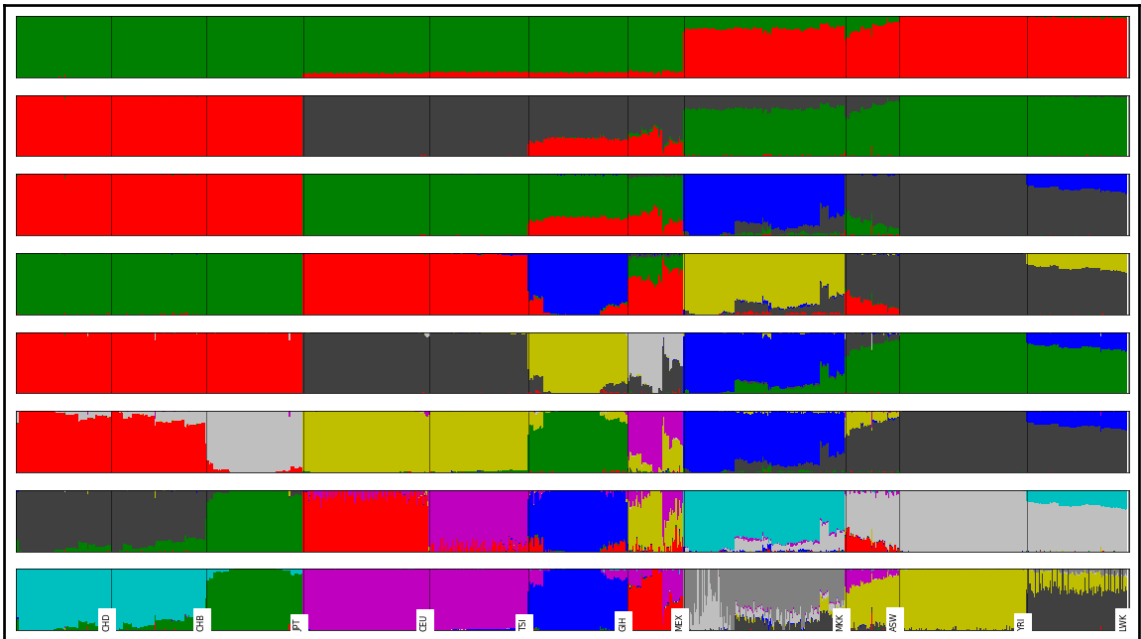
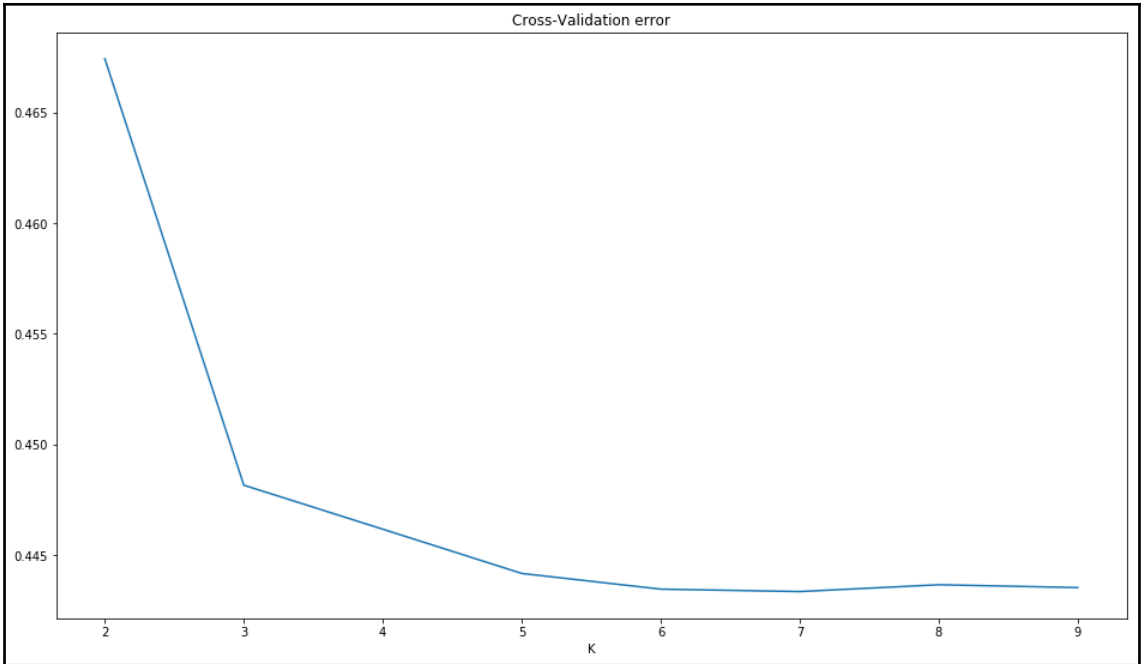
Chapter 4: Population Genetics



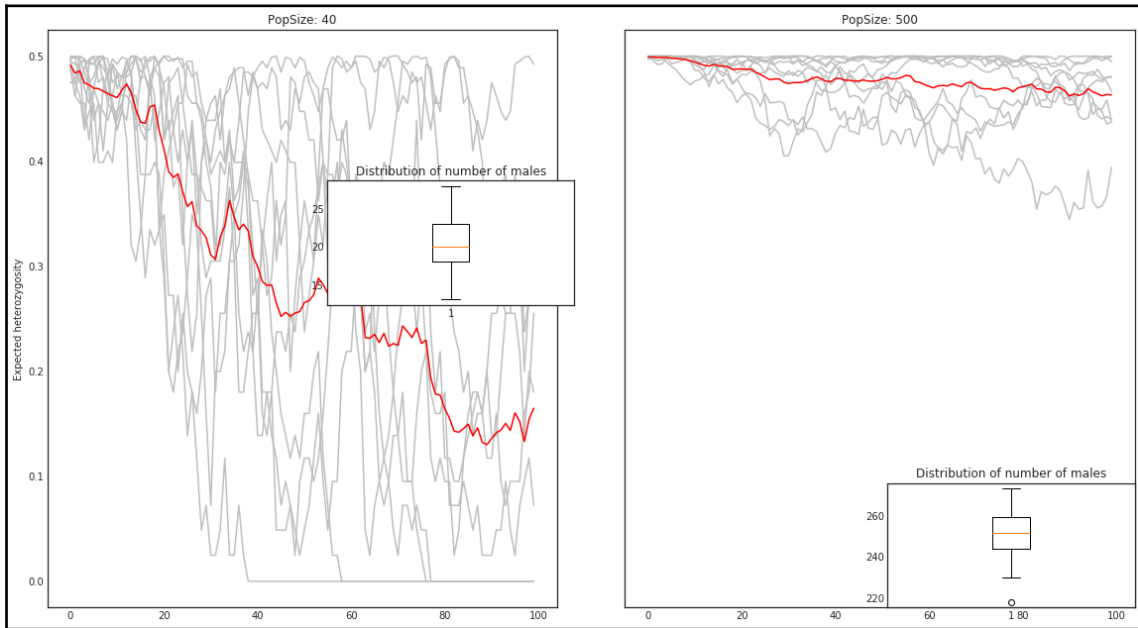


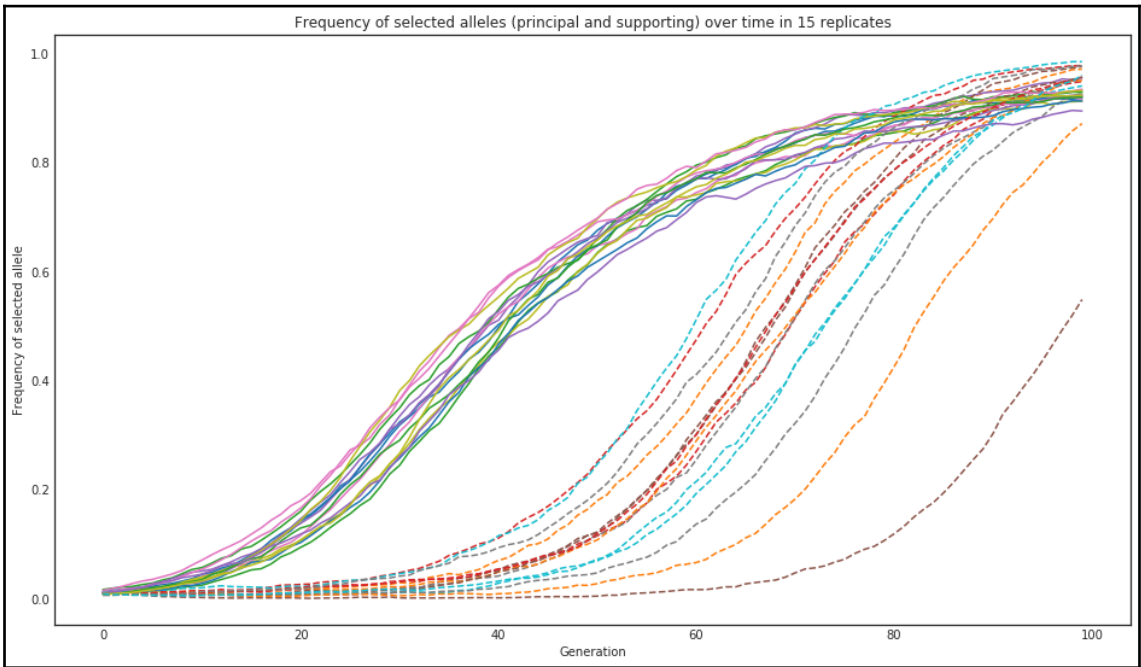
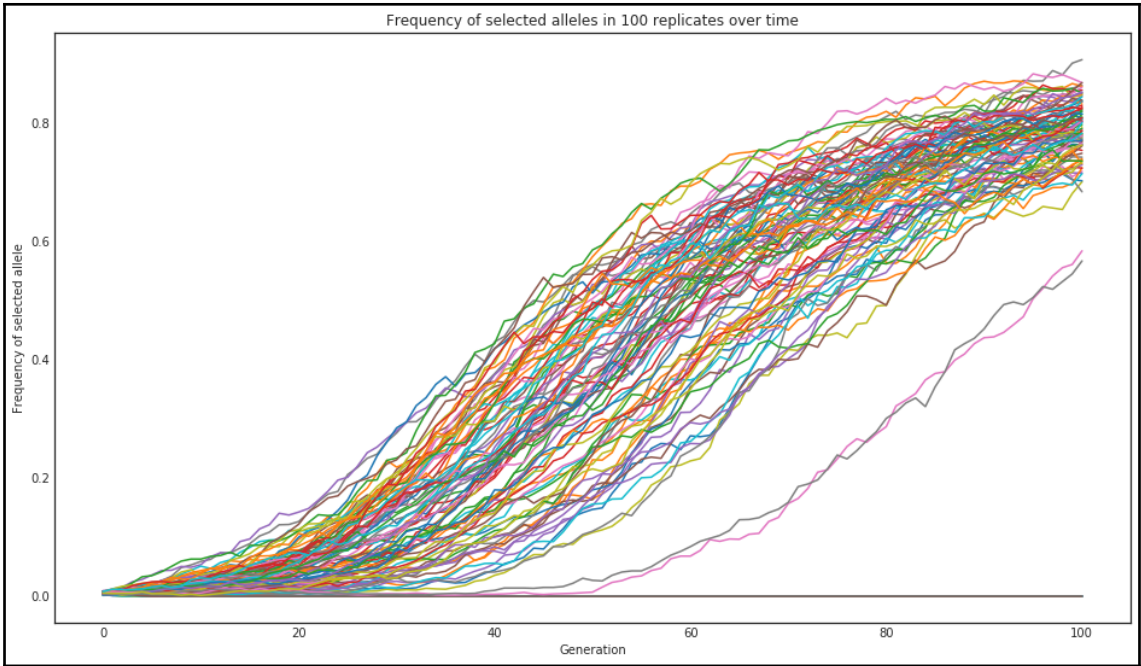


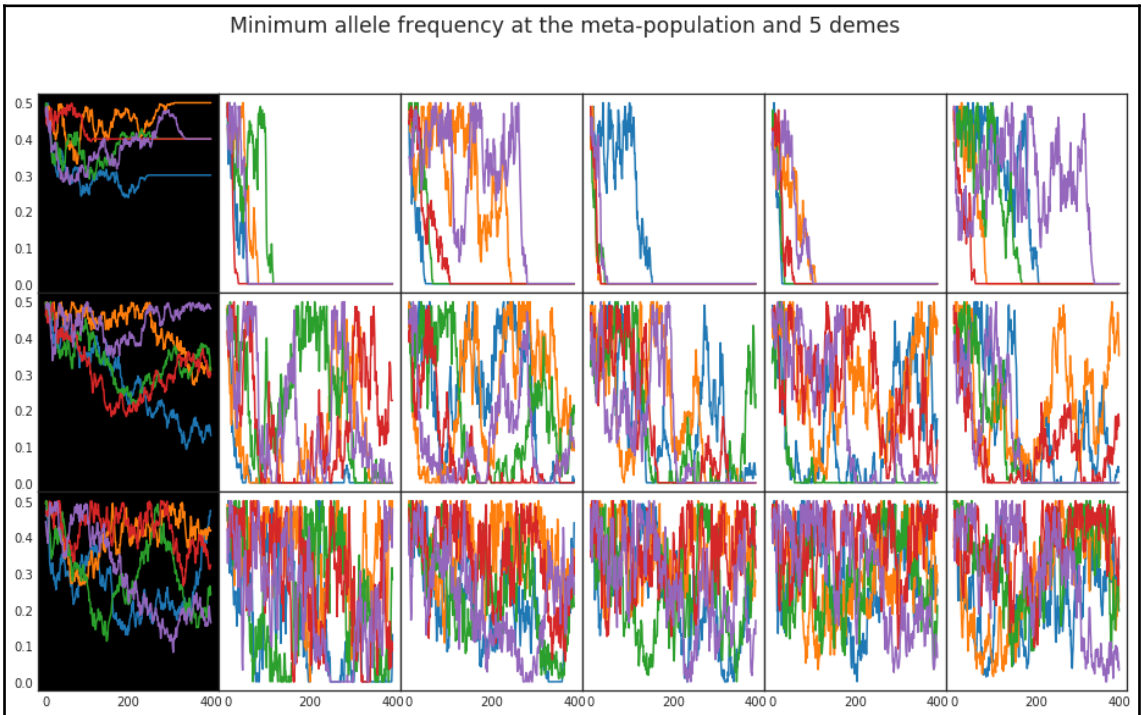
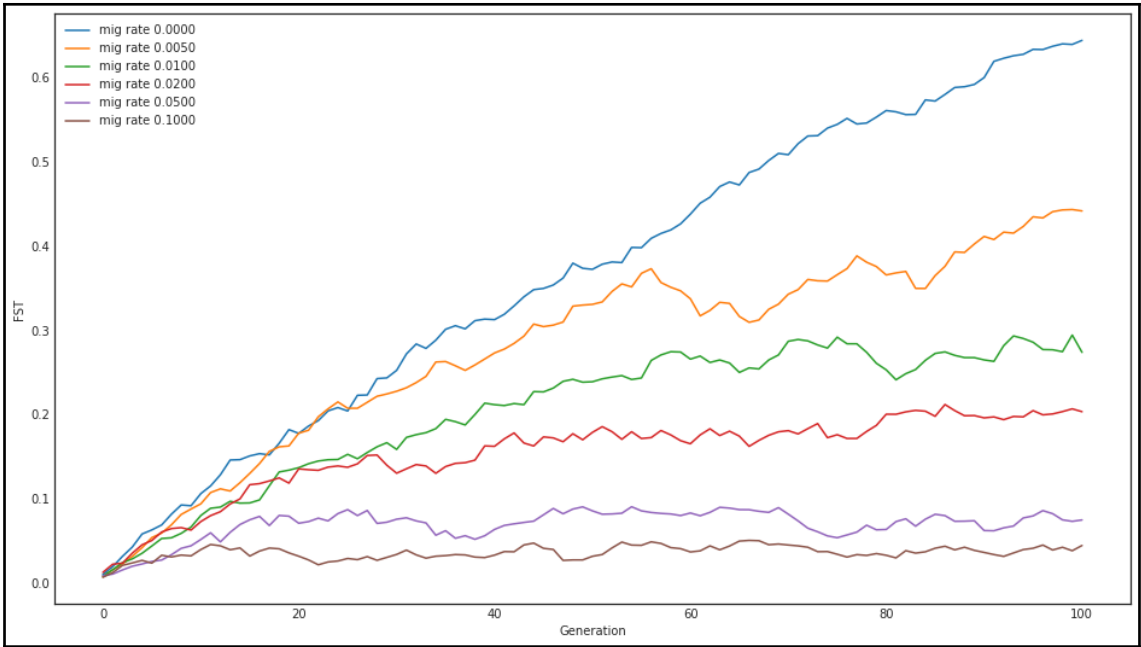


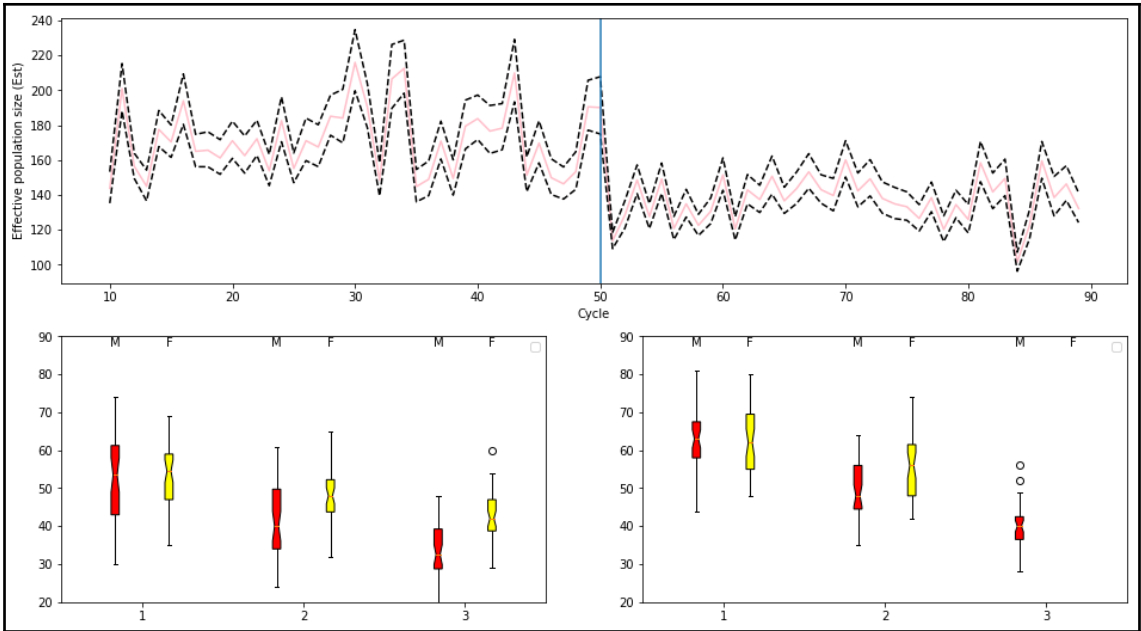


Chapter 5: Population Genetics Simulation



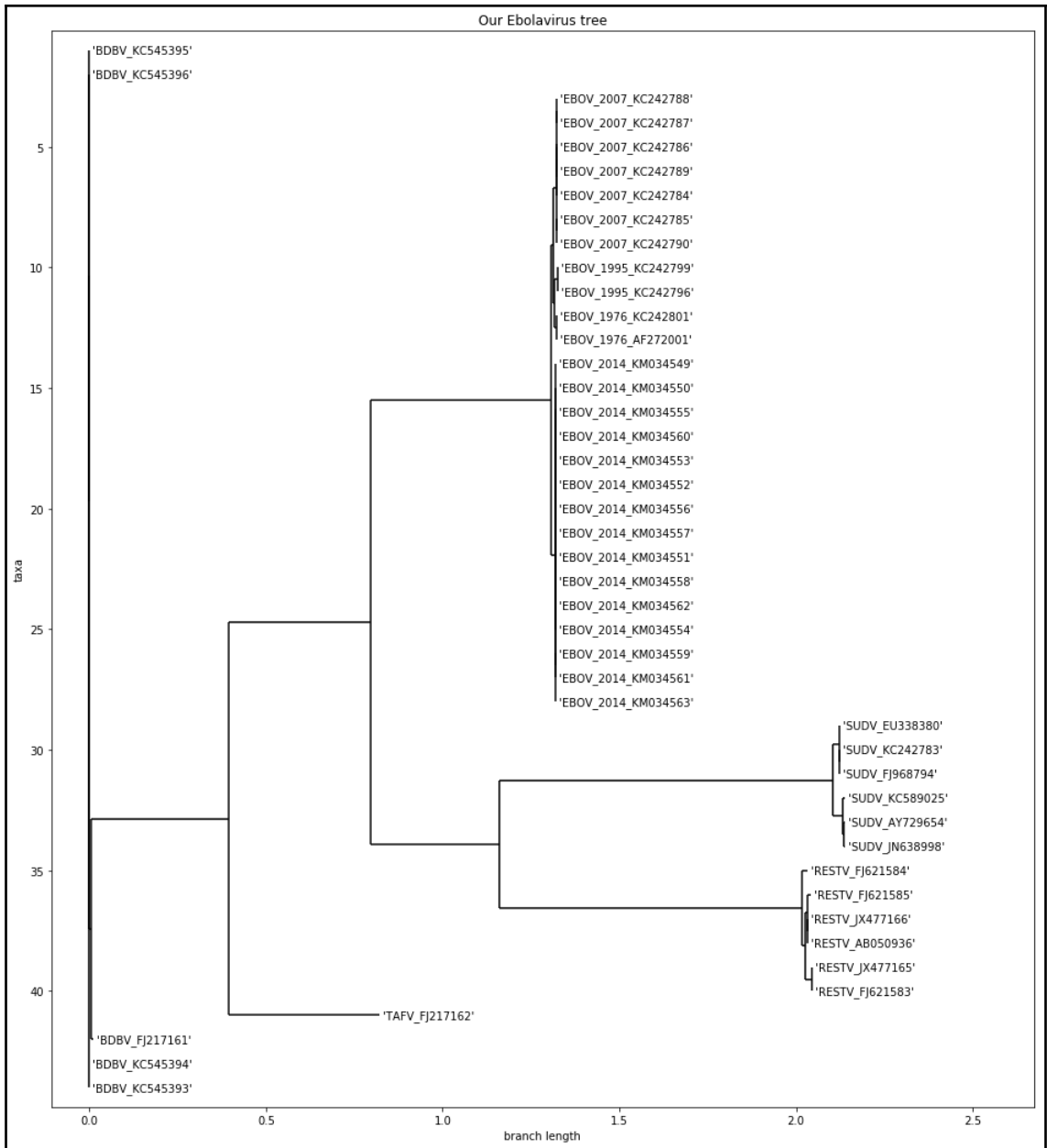


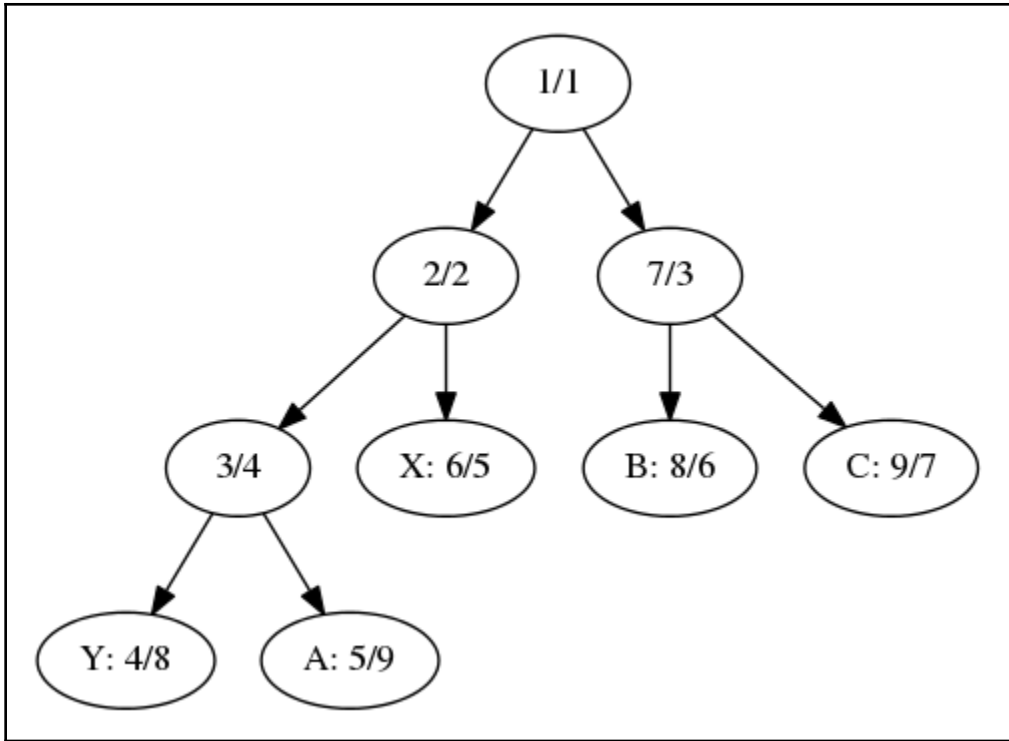


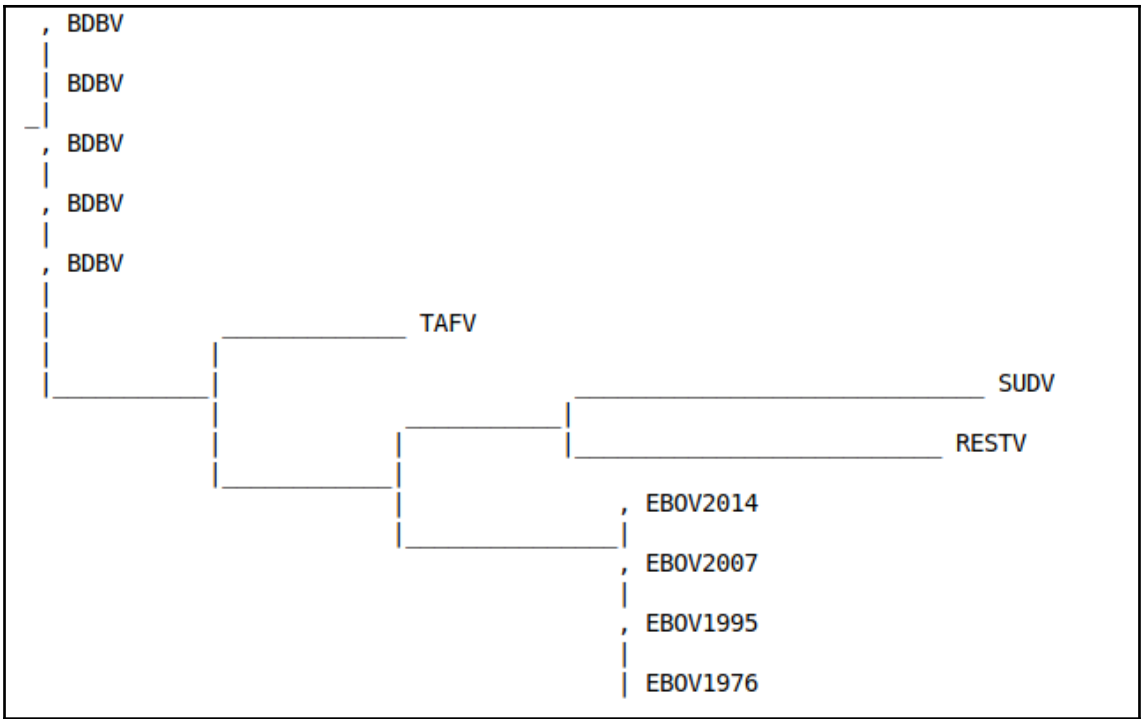


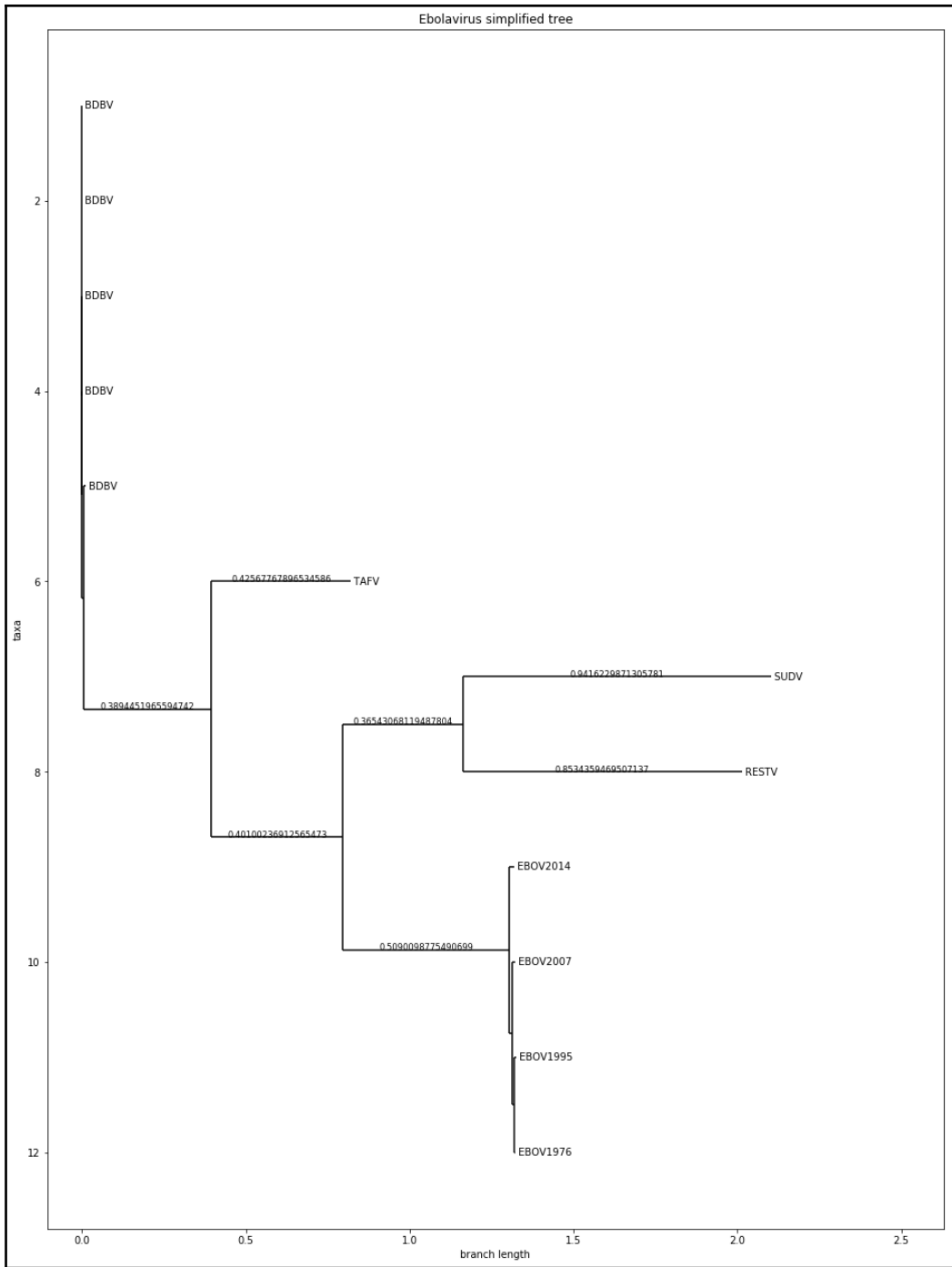
Chapter 6: Phylogenetics

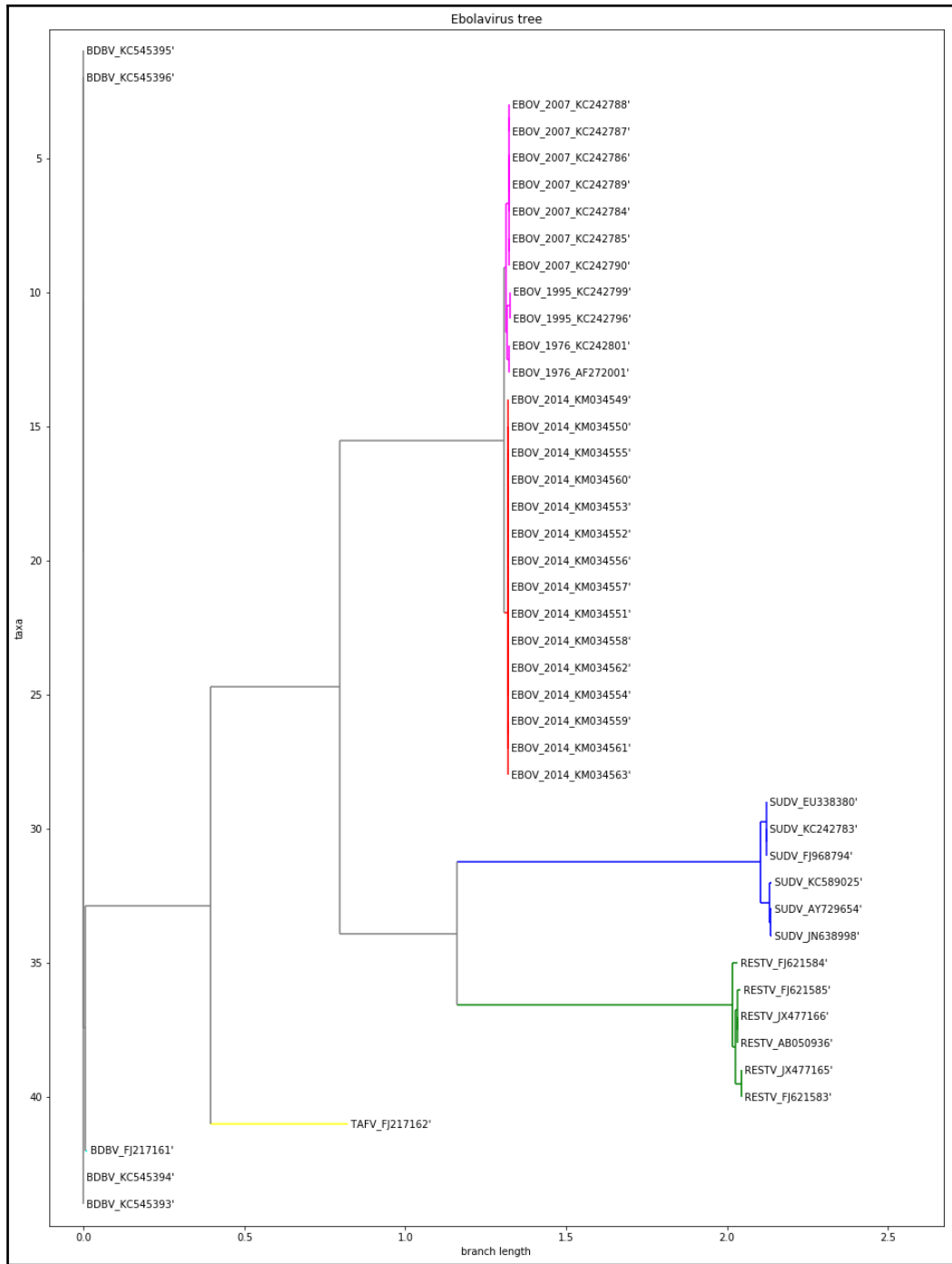
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NP	113.0	0.020659	-0.482275	49.489051	118.0	0.029630	1.203522	56.64
L	288.0	0.018143	-0.295386	126.131387	282.0	0.024193	1.412350	135.36
VP35	43.0	0.017427	-0.553739	18.832117	50.0	0.027761	1.069061	24.00
VP40	61.0	0.026155	-0.188135	26.715328	41.0	0.023517	1.269160	19.68











Chapter 7: Using the Protein Data Bank

	Entry	Entry name	Length	Organism	ID	Cross-reference (PDB)	Cross-reference (HGNC)
0	Q9W678	P53_BARBU	369	Barbus barbus (Barbel) (Cyprinus barbus)	40830	NaN	NaN
1	Q29537	P53_CANFA	381	Canis familiaris (Dog) (Canis lupus familiaris)	9615	NaN	NaN
2	O09185	P53_CRIGR	393	Cricetulus griseus (Chinese hamster) (Cricetul...	10029	NaN	NaN
3	Q8SPZ3	P53_DELLE	387	Delphinapterus leucas (Beluga whale)	9749	NaN	NaN
4	P79892	P53_HORSE	280	Equus caballus (Horse)	9796	NaN	NaN
5	P04637	P53_HUMAN	393	Homo sapiens (Human)	9606	1A1U;1A1E;1C26;1DT7;1GZH;1H26;1HS5;1JSP;1KZY;1...	11998;
6	O93379	P53_ICTPU	376	Ictalurus punctatus (Channel catfish) (Silurus...	7998	NaN	NaN
7	P56423	P53_MACFA	393	Macaca fascicularis (Crab-eating macaque) (Cyn...	9541	NaN	NaN
8	P61260	P53_MACFU	393	Macaca fuscata fuscata (Japanese macaque)	9543	NaN	NaN
9	P56424	P53_MACMU	393	Macaca mulatta (Rhesus macaque)	9544	NaN	NaN
10	P02340	P53_MOUSE	387	Mus musculus (Mouse)	10090	1HU8;2GEQ;2IOI;2IOM;2IOO;2P52;3EXJ;3EXL;	NaN
11	P25035	P53_ONCMY	396	Oncorhynchus mykiss (Rainbow trout) (Salmo gai...	8022	NaN	NaN

```

1493
('CHAIN', 1, 393, 'Cellular tumor antigen p53.', 'PRO_0000185703')
('DNA_BIND', 102, 292, '', '')
('REGION', 1, 83, 'Interaction with HRMT1L2.', '')
('MOTIF', 17, 25, 'TADI.', '')
('METAL', 176, 176, 'Zinc.', '')
('SITE', 120, 120, 'Interaction with DNA.', '')
('MOD_RES', 9, 9, 'Phosphoserine; by HIPK4. {ECO:0000269|PubMed:18022393}.', '')
('CROSSLNK', 291, 291, 'Glycyl lysine isopeptide (Lys-Gly) (interchain with G-Cter in ubiquitin). {ECO:0000269|PubMed:19536131}.', '')
('VAR_SEQ', 1, 132, 'Missing (in isoform 7, isoform 8 and isoform 9). {ECO:0000303|PubMed:16131611}.', 'VSP_040833')
('VARIANT', 5, 5, 'Q -> H (in a sporadic cancer; somatic mutation; abolishes strongly phosphorylation).', 'VAR_044543')
('MUTAGEN', 15, 15, 'S->A: Loss of interaction with PPP2R5C, PPP2CA AND PPP2R1A. {ECO:0000269|PubMed:17967874}.', '')
('HELIX', 19, 23, '{ECO:0000244|PDB:3DAC}.', '')
('STRAND', 27, 29, '{ECO:0000244|PDB:2K8F}.', '')
('TURN', 105, 108, '{ECO:0000244|PDB:3D06}.', '')
604
['GeneReviews', 'DNASU', 'MIM', 'SUFAM', 'Genevestigator', 'HOVERGEN', 'ExpressionAtlas', 'MaxQB', 'GeneWiki', 'SMR', 'Orphanet',
'CTD', 'GO', 'PhylomeDB', 'CCDS', 'nextProt', 'BindingDB', 'RefSeq', 'PRIDE', 'DMDM', 'Reactome', 'PROSITE', 'TreeFam', 'SWISS-2DPA
GE', 'NextBio', 'DIP', 'PRO', 'PANTHER', 'TCDB', 'Gene3D', 'DrugBank', 'PMAP-CutDB', 'Bgee', 'EvolutionaryTrace', 'ChEMBL', 'PIR',
'InParanoid', 'GeneCards', 'Pfam', 'PDBsum', 'KEGG', 'eggNOG', 'EMBL', 'PaxDb', 'DisProt', 'Proteomes', 'ProteinModelPortal', 'Ense
mbl', 'ChiTaRS', 'SignaLink', 'HPA', 'IntAct', 'MINT', 'PDB', 'UniGene', 'OMA', 'InterPro', 'PharmGKB', 'PhosphoSite', 'GenomeRNAI
', 'KO', 'BioGrid', 'UCSC', 'HGNC', 'PRINTS', 'GeneTree', 'GeneID']
133
('GO:0000785', 'C:chromatin', 'IBA:GO_Central')
('GO:0005524', 'F:ATP binding', 'IDA:UniProtKB')
('GO:0006915', 'P:apoptotic process', 'TAS:Reactome')

```

```

structure_method: x-ray diffraction
head: antitumor protein/dna
journal: AUTH Y.CHO,S.GORINA,P.D.JEFFREY,N.P.PAVLETICHTIL CRYSTAL STRUCTURE OF A P53 TUMOR SUPPRESSOR-DNATITL 2 C
OMPLEX: UNDERSTANDING TUMORIGENIC MUTATIONS.REF SCIENCE V. 265 346 1994REFN ISSN 0036-
8075PMID 8023157
journal_reference: y.cho,s.gorina,p.d.jeffrey,n.p.pavletich crystal structure of a p53 tumor suppressor-dna complex: understandi
ng tumorigenic mutations. science v. 265 346 1994 issn 0036-8075 8023157

compound:

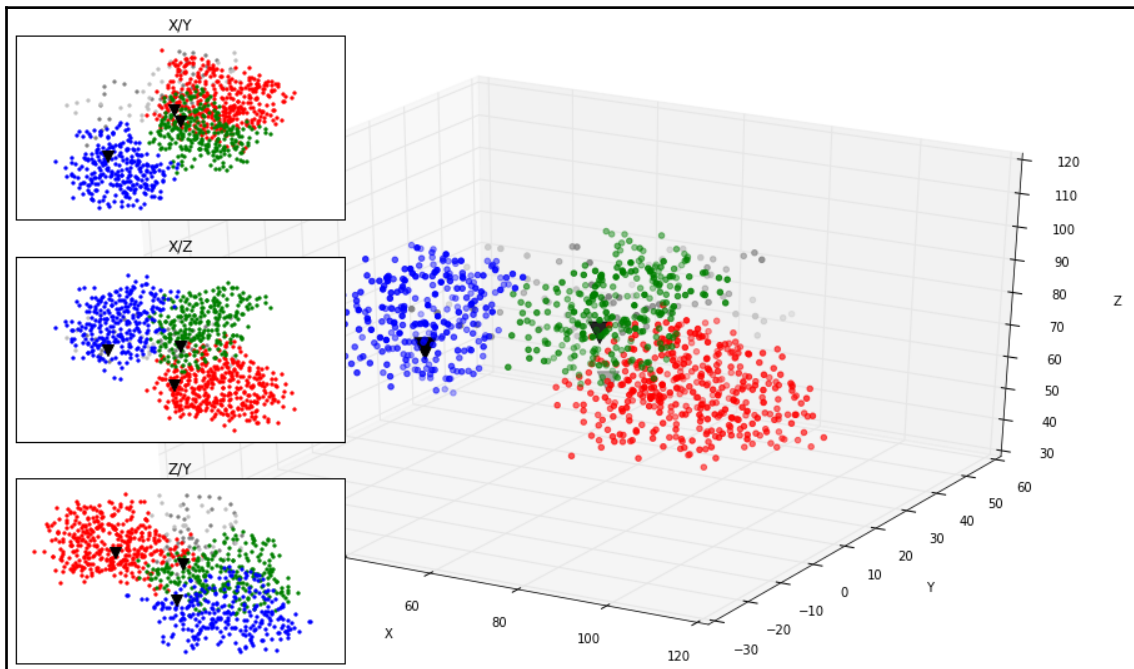
1:
molecule: dna (5'-d>(*tp*tp*cp*cp*tp*ap*gp*ap*cp*tp*tp*gp*cp*cp*a p*ap*tp*tp*a)-3')
misc:
engineered: yes
chain: e

3:
molecule: protein (p53 tumor suppressor )
misc:
engineered: yes
chain: a, b, c

2:
molecule: dna (5'-d(*ap*tp*ap*ap*tp*tp*gp*gp*gp*cp*ap*ap*gp*tp*cp*tp*a p*gp*gp*ap*a)-3')
misc:
engineered: yes
chain: f

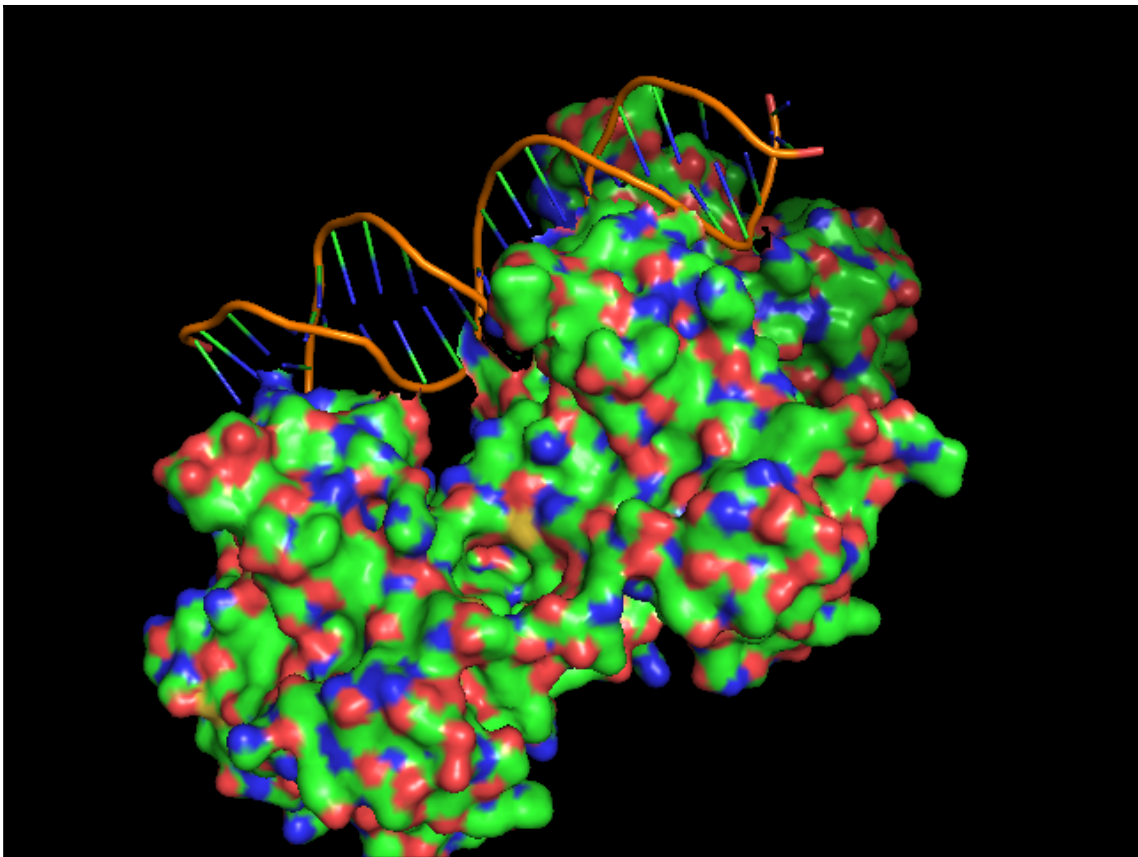
keywords: antigen p53, antitumor protein/dna complex
name: tumor suppressor p53 complexed with dna
author: Y.Cho,S.Gorina,P.D.Jeffrey,N.P.Pavletich
deposition_date: 1995-07-11
release_date: 1995-07-11

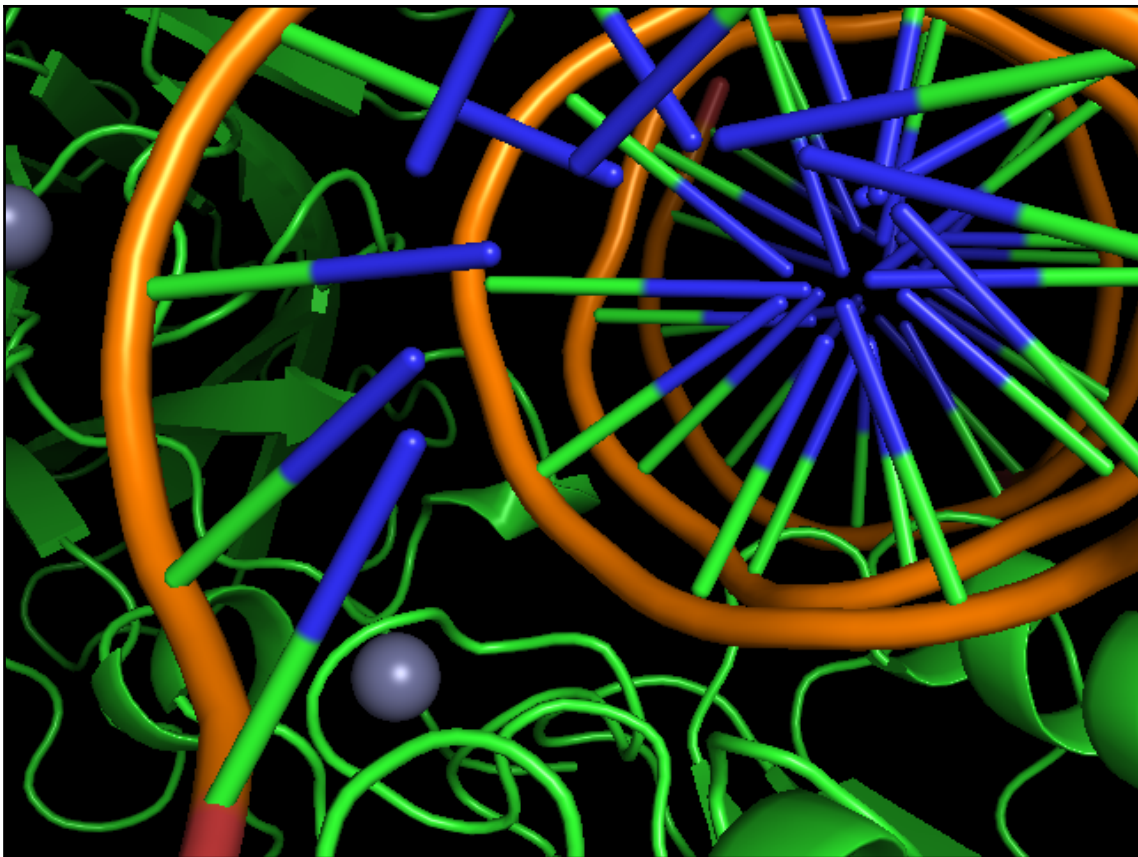
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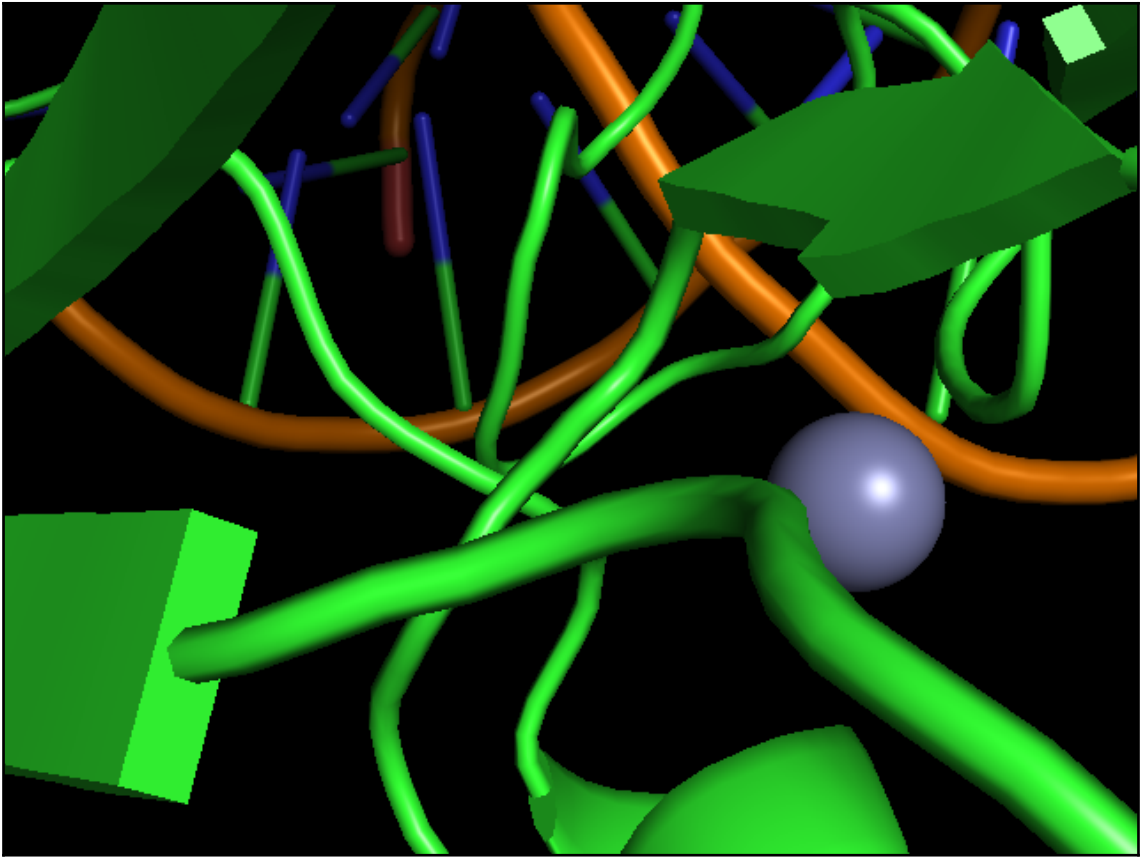


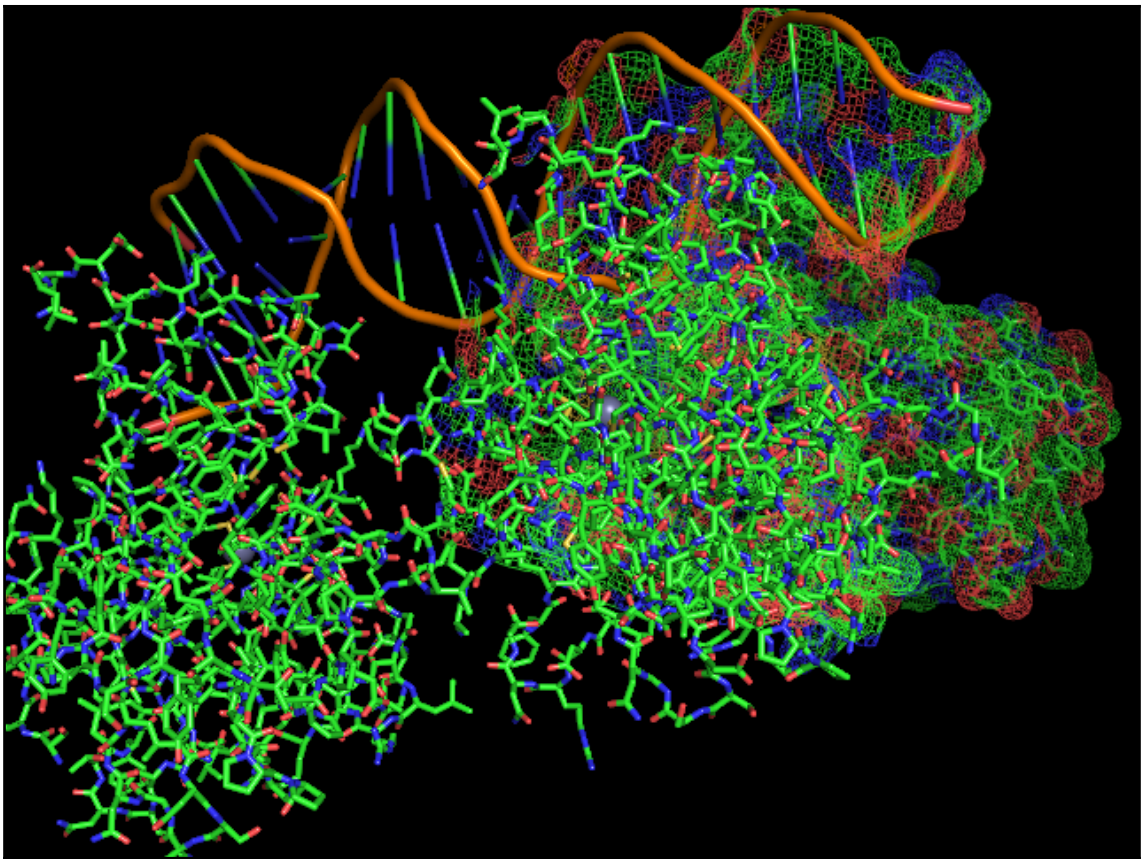
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E	6068.04412	0.00	351.9868
F	6258.20442	0.00	223.9916
A	20548.26300	65.39	3167.8812
B	20368.18840	65.39	1119.9580
C	20466.22540	65.39	1279.9520

	X	Y	Z	X (Mass)	Y (Mass)	Z (Mass)
E	49.727231	32.744879	81.253417	49.708513	32.759725	81.207395
F	51.982368	33.843370	81.578795	52.002223	33.820064	81.624394
A	72.990763	28.825429	56.714012	72.822668	28.810327	56.716117
B	67.810026	12.624435	88.656590	67.729100	12.724130	88.545659
C	38.221565	-5.010494	88.293141	38.169364	-4.915395	88.166711









Chapter 8: Bioinformatics Pipelines

Hello, your Galaxy Docker container is running!

To customize this page you can create a [welcome.html](#) page in your directory mounted to `/export`.

[Configuring Galaxy >](#) [Installing Tools >](#)

[Guided Tour >](#)

Galaxy is an open platform for supporting data intensive research. Galaxy is developed by [The Galaxy Team](#) with the support of [many contributors](#). The Galaxy Docker project is supported by the University of Freiburg, part of de.NBI.

The [Galaxy Project](#) is supported in part by NHGRI, NSF, [The Huck Institutes of the Life Sciences](#), [The Institute for CyberScience at Penn State](#), and [Johns Hopkins University](#).





























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##bed_to_gff_converter.py								
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2	bed2gff	ENSE00001660765	135833111	135833190	0	-	-	ENSE00001660765;
2	bed2gff	ENSE00001731451	135829593	135829676	0	-	-	ENSE00001731451;
2	bed2gff	ENSE00001659892	135823901	135824003	0	-	-	ENSE00001659892;
2	bed2gff	ENSE00001776220	135822020	135822098	0	-	-	ENSE00001776220;
2	bed2gff	ENSE00001602826	135817341	135818061	0	-	-	ENSE00001602826;
2	bed2gff	ENSE00000776576	135812311	135812956	0	-	-	ENSE00000776576;
2	bed2gff	ENSE00001008768	135808443	135809993	0	-	-	ENSE00001008768;
2	bed2gff	ENSE00000776573	135807128	135807396	0	-	-	ENSE00000776573;
2	bed2gff	ENSE00000776572	135804767	135805057	0	-	-	ENSE00000776572;
2	bed2gff	ENSE00000776571	135803930	135804128	0	-	-	ENSE00000776571;
2	bed2gff	ENSE00000776570	135800607	135800809	0	-	-	ENSE00000776570;
2	bed2gff	ENSE000003515081	135796029	135798138	0	-	-	ENSE000003515081;
2	bed2gff	ENSE000001630333	135794641	135794775	0	-	-	ENSE000001630333;
2	bed2gff	ENSE00001667885	135790658	135790881	0	-	-	ENSE00001667885;
2	bed2gff	ENSE00001728878	135789571	135789798	0	-	-	ENSE00001728878;
2	bed2gff	ENSE00001653704	135787840	135788544	0	-	-	ENSE00001653704;
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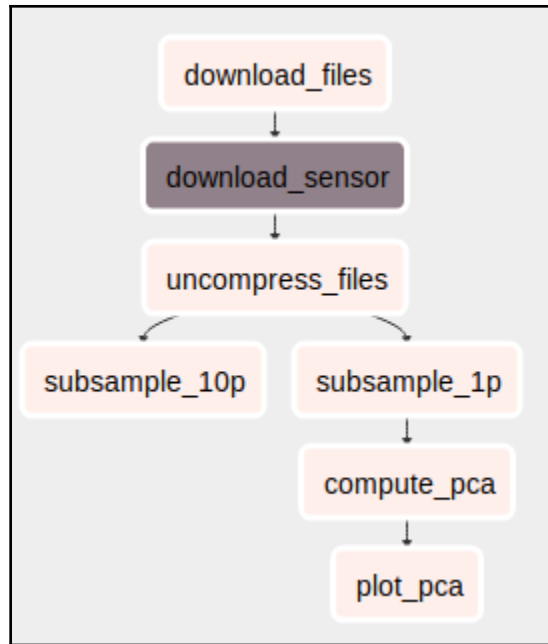
localhost:8080/admin/connection/ 2018-09-17 04:50:14 UTC

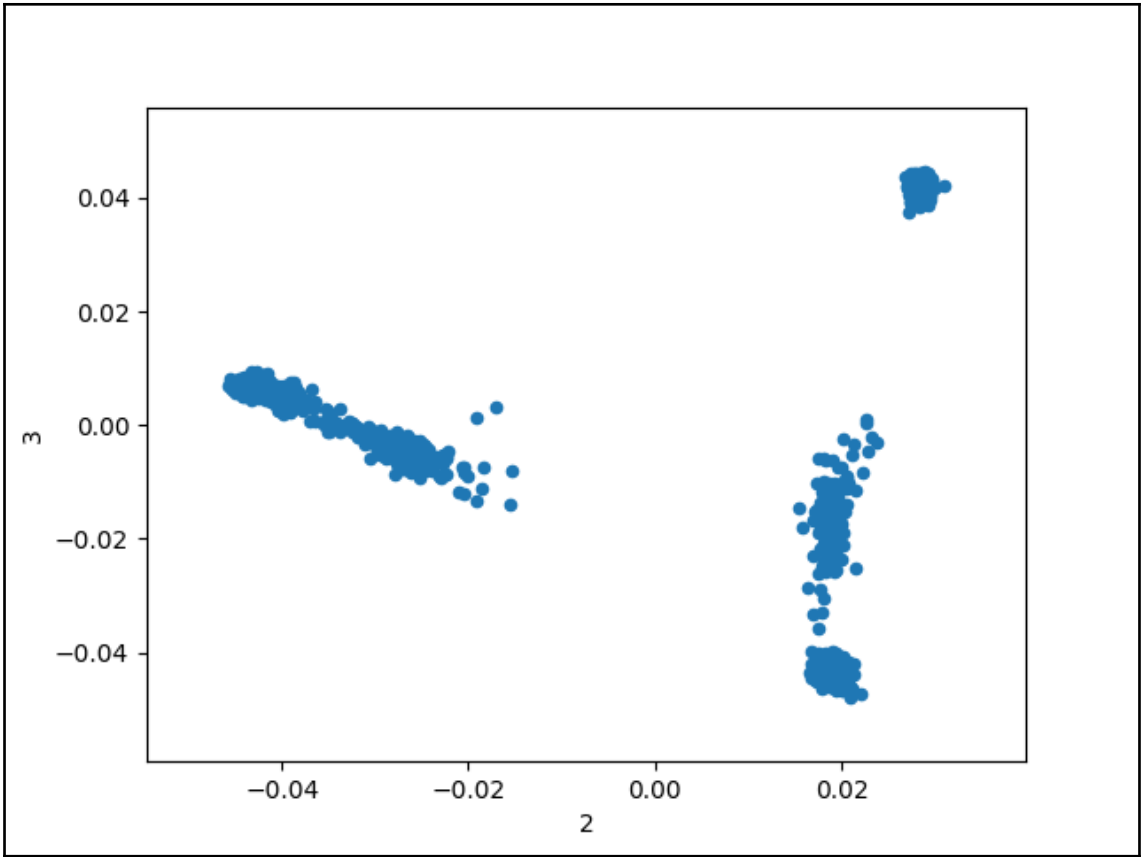
Airflow DAGs Data Profiling Browse Admin Docs About

Connections

List (36) Create With selected

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<input type="checkbox"/>	 	azure_data_lake_default	azure_data_lake			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	 	beeline_default	beeline	localhost	10000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	 	bigquery_default	google_cloud_platform			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
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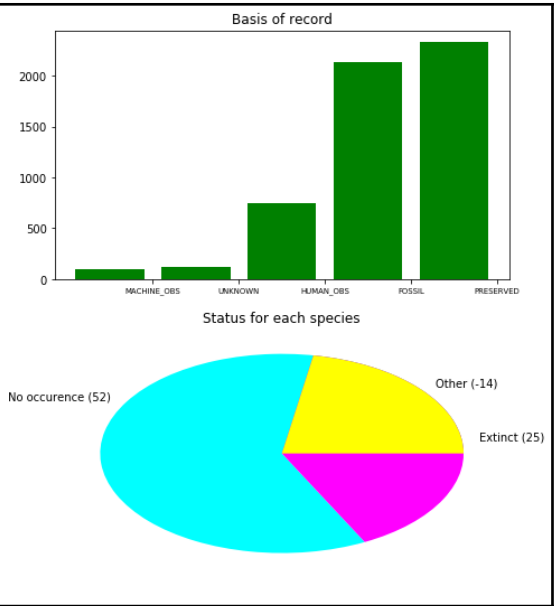
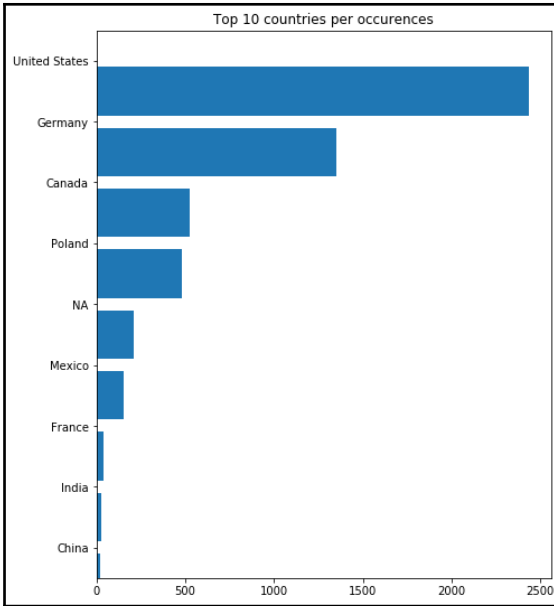
Chapter 9: Python for Big Genomics Datasets

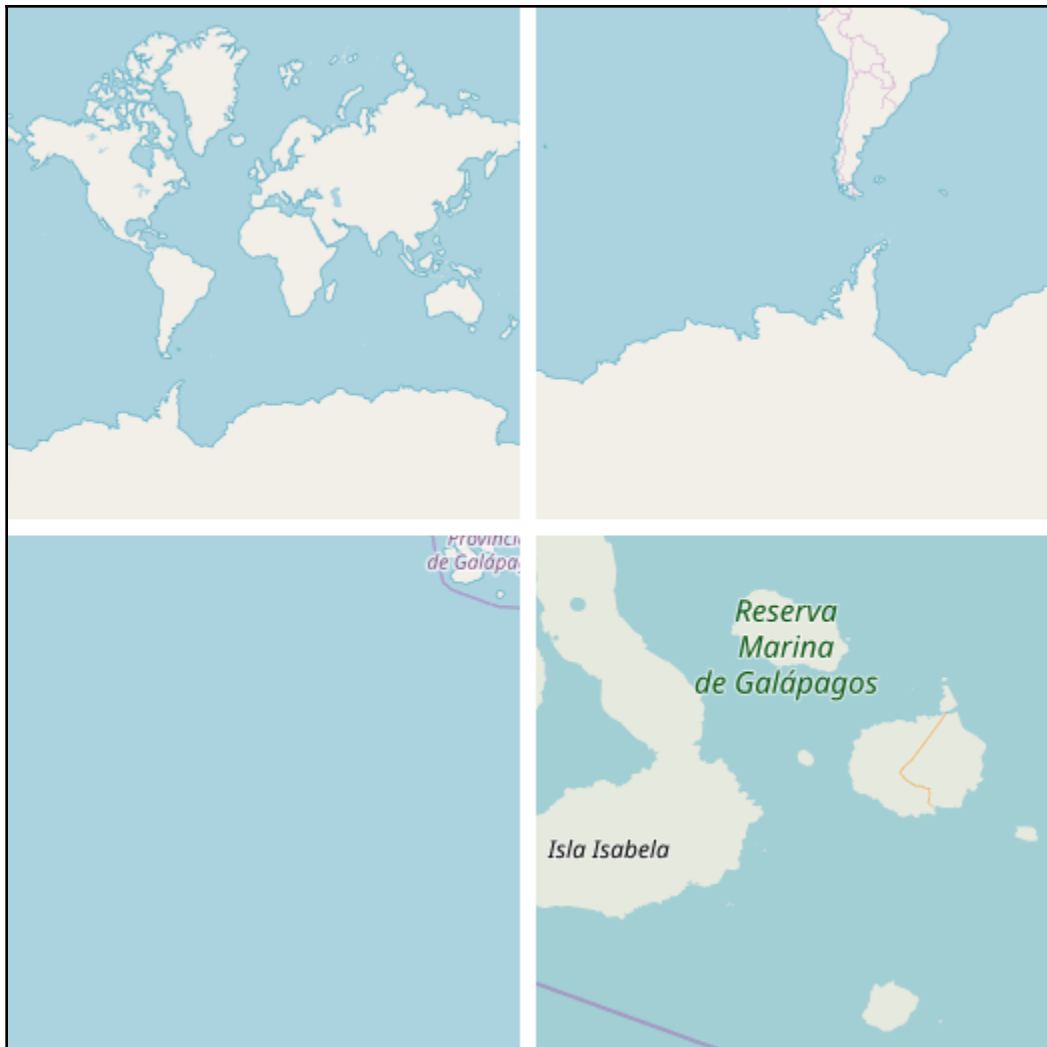
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/ Group
/3L Group
/3L/calldata Group
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/3L/calldata/genotype Dataset {9643193/Inf, 765, 2}
/3L/calldata/is_called Dataset {9643193/Inf, 765}
/3L/samples Dataset {765}
/3L/variants Group
[.]
/3L/variants/DP Dataset {9643193/Inf}
/3L/variants/MQ Dataset {9643193/Inf}
/3L/variants/POS Dataset {9643193/Inf}
/3L/variants/is_snp Dataset {9643193/Inf}
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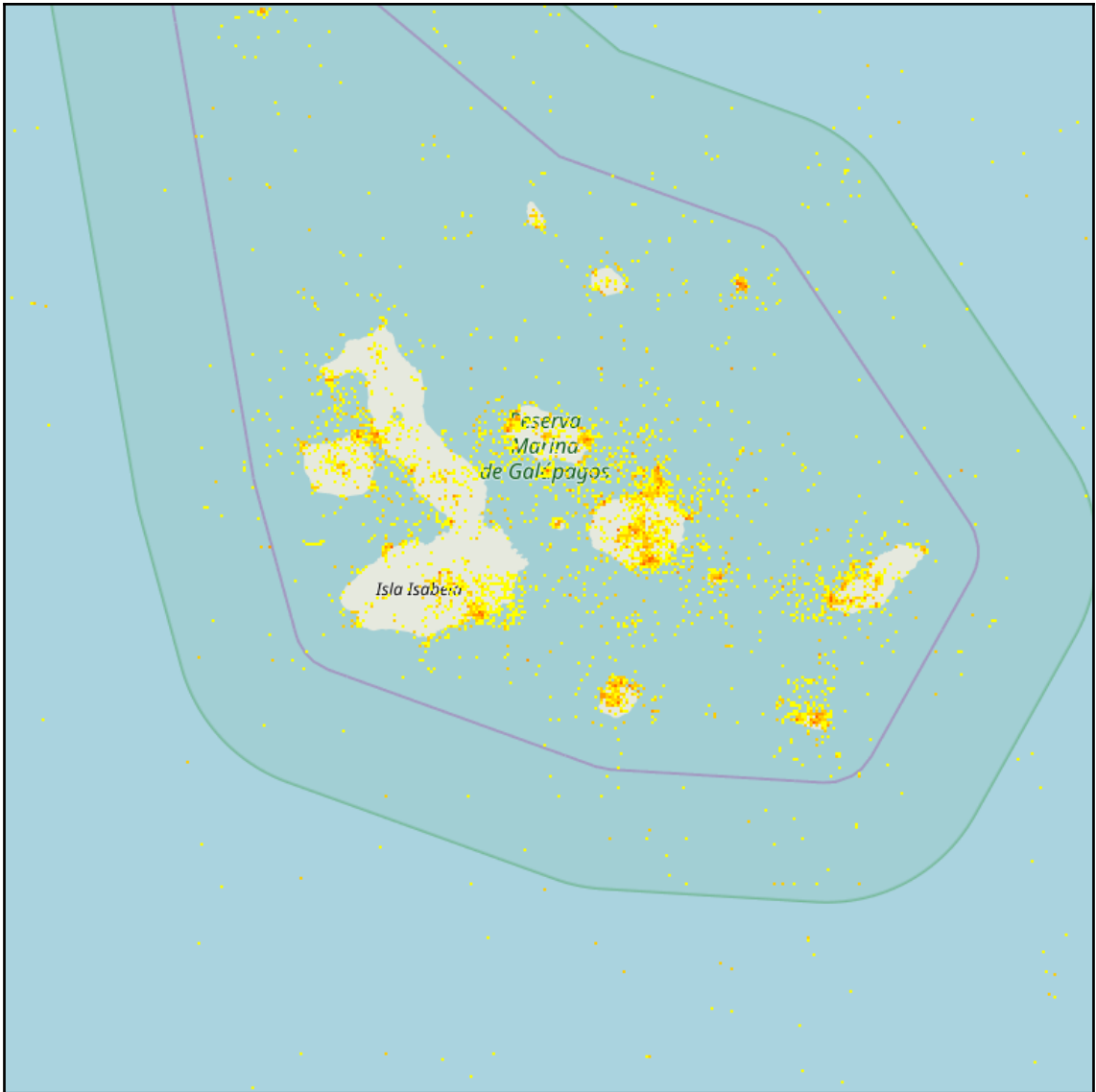
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1	922	153	0	32	0.000654	0.486928
2	947	178	0	37	0.000654	0.451634
3	1508	77	0	49	0.000654	0.394771
4	16	0	0	2	0.000654	0.323529
5	367	8	0	10	0.000000	0.450327
6	1235	8	0	54	0.000000	0.395425
7	1570	32	0	68	0.000654	0.393464
8	193	0	0	4	0.000654	0.254902
9	255	39	0	16	0.000654	0.411765

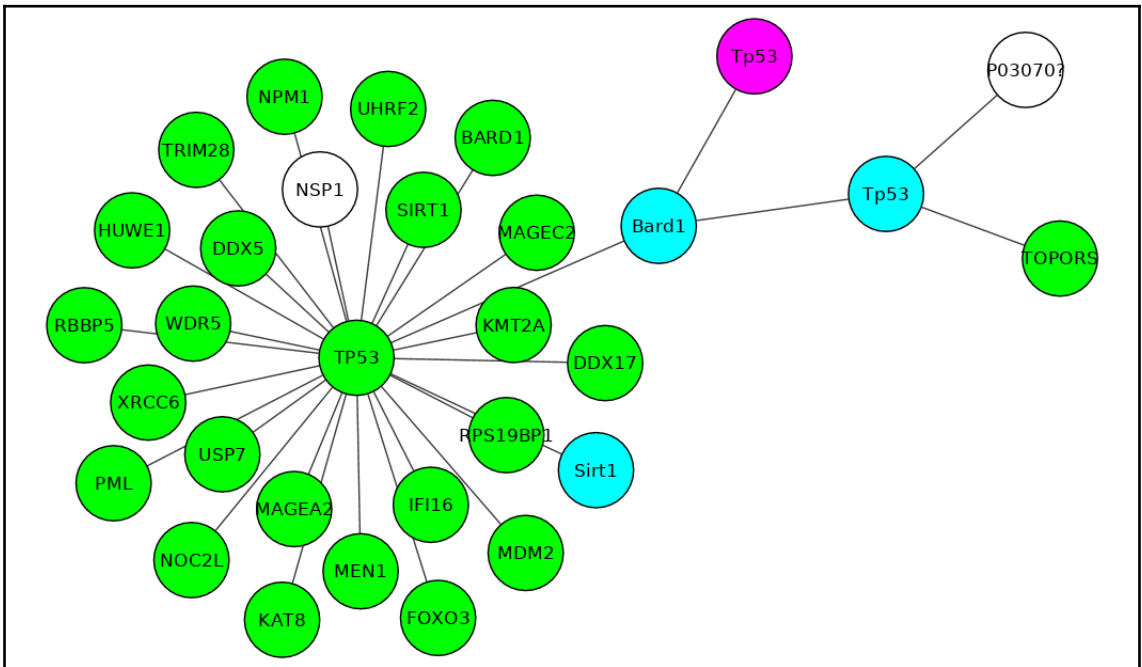
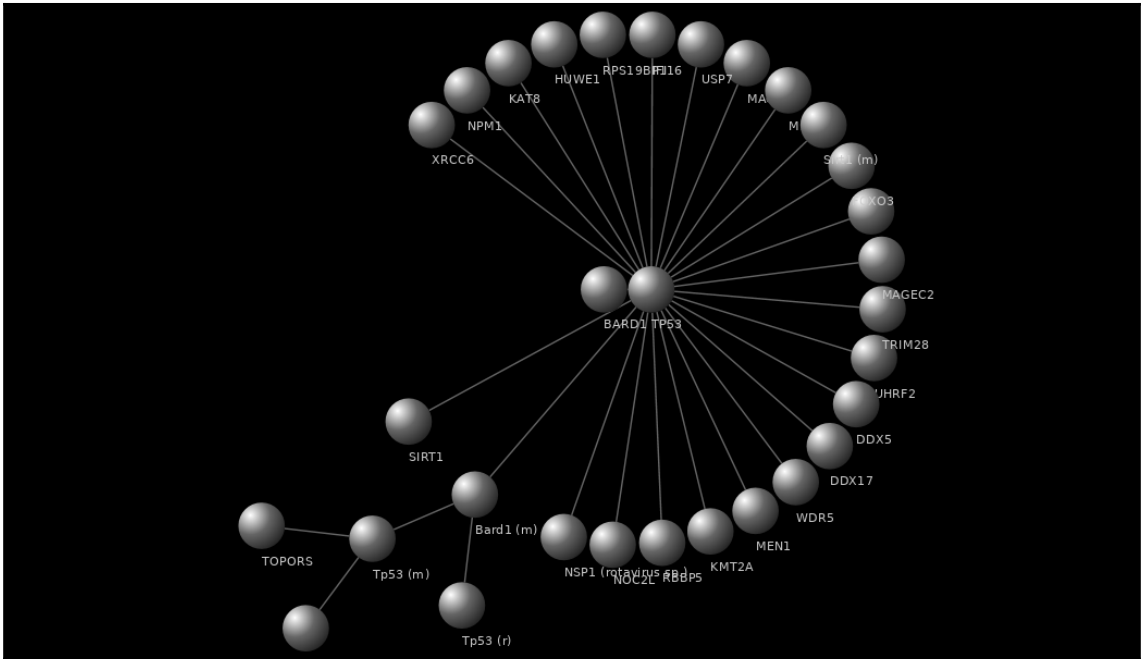
Chapter 10: Other Topics in Bioinformatics

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Chapter 11: Advanced NGS Processing

