Serial	Name	Durations	Category	Main Category
1	In-Depth Introduction to Bioinformatics Freelancing		Introduction to Bioinformatics Freelancing	Introduction to Bioinformatics Freelancing
2	In-Depth Guide on FIVERR		Top Platforms for Freelancing	Top Platforms for Freelancing
3	In-Depth Guide on Upwork		Top Platforms for Freelancing	Top Platforms for Freelancing
4	What Kind of Services Can You Sell as a Bioinformatician?		How to Set Up Your Bioinformatics Services	How to Set Up Your Bioinformatics Services
5	What Exactly Do You Need to Learn to Provide Your Services?		How to Set Up Your Bioinformatics Services	How to Set Up Your Bioinformatics Services
6	How to Connect With Clients and Accept Their Projects?		How to Set Up Your Bioinformatics Services	How to Set Up Your Bioinformatics Services
7	Case Study 1: Mutagensis of Proteins Using PyMol		Case Studies	Case Studies
8	Case Study: Scripting for Biological Analysis		Case Studies	Case Studies
9	Case Study 3: Functional Bioinformatics Analysis		Case Studies	Case Studies
10	Introduction to National Center of Biotechnology Information (NCBI)	18:01	NCBI	Bioinformatics Databases
11	Sequence Analysis	17:59	NCBI	Bioinformatics Databases
12	Sequence Retrieval from NCBI	16:16	NCBI	Bioinformatics Databases
13	PubMed Central & ENTREZ	11:06	NCBI	Bioinformatics Databases
14	FASTA (Sequence Format)	6:13	Sequence Format	Bioinformatics File Formats
15	GenBank: Nucleotide Database on NCBI	6:50	NCBI	Bioinformatics Databases
16	GenBank (Sequence Annotation Format)	7:08	Sequence Format	Bioinformatics File Formats
17	FASTA vs. GenBank	18:26	NCBI	Bioinformatics Databases
18	Gene Database: A Comprehensive Gene Database	30:21:00	NCBI	Bioinformatics Databases
19	NCBI Genomes & NCBI Assembly: Retrieval of Genomes	36:14:00	NCBI	Bioinformatics Databases
20	FASTQ Format	18:01	Sequence Format	Bioinformatics File Formats
21	Gene File Format/Gene Transfer Format	11:06	Sequence Format	Bioinformatics File Formats
22	BED (Gene Structure Format)	4:26	Sequence Format	Bioinformatics File Formats
23	SAM	9:06	Sequence Format	Bioinformatics File Formats
24	BAM	9:06	Sequence Format	Bioinformatics File Formats
25	RefSeq Database: Retrieval of Single Reference Sequences	11:15	NCBI	Bioinformatics Databases
26	BLAST Database Searching	25:36:00	NCBI	Bioinformatics Databases
27	Introduction to Molecular Modeling Database (MMDB)	8:06	NCBI	Bioinformatics Databases
28	Database of Short Genetic Variations (dbSNP)	12:16	NCBI	Bioinformatics Databases
29	HomoloGene: Discovery of Gene and Protein Families	6:10	NCBI	Bioinformatics Databases
30	Taxonomy	9:56	NCBI	Bioinformatics Databases
31	Introduction to UCSC Genome Browser & SARS-CoV-2 Viral Genome	13:40	UCSC	Bioinformatics Databases
32	Retrieve an Entire Genome & Retrieval of SARS-CoV-2 Viral Genome	9:40	UCSC	Bioinformatics Databases

33	Retrieval of Genomic Data & Annotation of SARS-CoV-2 Viral Genome	5:29	UCSC	Bioinformatics Databases
34	Table Browser & SARS-CoV-2 Viral Genome	12:15	UCSC	Bioinformatics Databases
35	Visualization of Genomic Data on the Genome Browser & SARS-CoV-2 Genome	10:51	UCSC	Bioinformatics Databases
36	Introduction to UniProt	9:56	UniProt	Protein Databases & Analysis
37	UniProtKB & Protein Analysis	39:29:00	UniProt	Protein Databases & Analysis
38	UniProteome & Retreieval of an Entire Proteome	13:05	UniProt	Protein Databases & Analysis
39	UniProt BLAST - Database Searching	12:32	UniProt	Bioinformatics Databases
40	ID Mapping & Making Analysis Easier	7:17	UniProt	Protein Databases & Analysis
41	UniProt Peptide Search - Find Regions Within UniProt Database	3:15	UniProt	Bioinformatics Databases
42	Introduction to Protein Data Bank (PDB)	6:44	PDB	Protein Databases & Analysis
43	Accurately Searching for a Protein Structure on PDB & Protein Analysis	13:55	PDB	Protein Databases & Analysis
44	Biological Annotation and Protein Features View & Analysis	8:18	PDB	Protein Databases & Analysis
45	Browsing PDB According to Annotation	6:52	PDB	Protein Databases & Analysis
46	Digging Out Categorized & Specific Protein Structures from PDB Archives	6:23	PDB	Protein Databases & Analysis
47	Alignment Between Two PDB Sequences & Structures	6:07	PDB	Protein Databases & Analysis
48	3D Structure Visualization on PDB	10:49	PDB	Protein Databases & Analysis
49	Mapping Genomic Position to Protein Sequence and 3D Structure	4:34	PDB	Protein Databases & Analysis
50	Genomic Discovery of Protein Structure Through Gene	4:07	PDB	Protein Databases & Analysis
51	PDB - Protein Symmetry	2:34	PDB	Protein Databases & Analysis
52	Introduction to ENSEMBL	7:49	ENSEMBL	Bioinformatics Databases
53	Retrieval of a Gene-Protein-Chromosomal Region	18:01	ENSEMBL	Bioinformatics Databases
54	Genome Assembly Retrieval and Analysis	10:23	ENSEMBL	Bioinformatics Databases
55	Gene Analysis & Annotation	34:40:00	ENSEMBL	Bioinformatics Databases
56	Variation Analysis	24:36:00	ENSEMBL	Bioinformatics Databases
57	ENSEMBL BLAST/BLAT	15:08	ENSEMBL	Bioinformatics Databases
58	Regulation - Understand the Influence of Regulatory Elements on Genes	4:18	ENSEMBL	Bioinformatics Databases
59	Comparative Genomics Analysis	5:34	ENSEMBL	Bioinformatics Databases
60	Introduction to InterPro	4:10	InterPro	Protein Databases & Analysis
61	InterPro - Protein Family Classifcation and Analysis	14:35	InterPro	Protein Databases & Analysis
62	InterPro - Protein & Protein Domain Analysis	9:29	InterPro	Protein Databases & Analysis
63	Introducton to Phytozome	9:38	Phytozome	Bioinformatics Databases
64	Interpret Plant Genome Records	9:06	Phytozome	Bioinformatics Databases
65	Download an Entire Plant Genome & Proteome	26:41:00	Phytozome	Bioinformatics Databases
66	Keyword or BLAST Search in a Plant Genome	15:58	Phytozome	Bioinformatics Databases

67	Visualize a Plant Genome Using JBrowse	17:38	Phytozome	Bioinformatics Databases
68	UniProt Align - Pairwise & Multiple Sequence Alignment and Annotation	3:47	UniProt	Bioinformatics Databases
69	EMBOSS NEEDLE: Global Alignment of Sequences	20:02	Pairwise Sequence Alignment & Analysis	Sequence Alignment & Analysis
70	EMBOSS Water	9:10	Pairwise Sequence Alignment & Analysis	Sequence Alignment & Analysis
71	Clustal Omega: Most Reliable Multiple Sequnce Alignment Tool	19:18	Multiple Sequence Alignment & Analysis	Sequence Alignment & Analysis
72	Clustal Omega Alignment Format	5:07	Alignment Format	Bioinformatics File Formats
73	Jalview	13:42	Multiple Sequence Alignment & Analysis	Sequence Alignment & Analysis
74	T-Coffee: Iterative Multiple Sequence Alignment Tool	8:37	Multiple Sequence Alignment & Analysis	Sequence Alignment & Analysis
75	MUSCLE: Accurate Multiple Sequence Alignment Tool	21:07	Multiple Sequence Alignment & Analysis	Sequence Alignment & Analysis
76	MEGA - Multiple Sequence Alignment	4:23	Multiple Sequence Alignment & Analysis	Sequence Alignment & Analysis
77	MEGA (Alignment Format)	5:32	Alignment Format	Bioinformatics File Formats
78	MAFFT - Fastest Multiple Sequence Alignment Tool	8:22	Multiple Sequence Alignment & Analysis	Sequence Alignment & Analysis
79	PHYLIP - Multiple Sequence Alignment Format	4:34	Alignment Format	Bioinformatics File Formats
80	Stockholm Alignment Format	3:10	Alignment Format	Bioinformatics File Formats
81	Aln2Plot	2:30	Sequence Analysis	Sequence Alignment & Analysis
82	MEGA	21:20	Phylogenetic Analysis	Phylogenetic Analysis
83	iTOL: Creating Publishable Phylogenetic Figures	13:42	Phylogenetic Tree Visualization & Analysis	Phylogenetic Analysis
84	FigTree	21:26	Phylogenetic Tree Visualization & Analysis	Phylogenetic Analysis
85	Quick2D	4:33	Secondary Structure Prediction	Secondary Structure Prediction
86	Ali2D	4:09	Secondary Structure Prediction	Secondary Structure Prediction
87	Jpred: Prediction Secondary Structure of the Proteins	4:54	Secondary Structure Prediction	Secondary Structure Prediction
88	HHrepID	5:15	Secondary Structure Prediction	Secondary Structure Prediction
89	DeepCoil	3:22	Secondary Structure Prediction	Secondary Structure Prediction
90	REPPER - Predict Gapless Repeats in Proteins	2:25	Secondary Structure Prediction	Secondary Structure Prediction
91	HMMER - Hidden Markov Model Based Protein Profiles Database	13:16	Protein Analysis	Protein Databases & Analysis
92	SignalP: Prediction of Signal Peptides	7:57	Protein Analysis	Protein Databases & Analysis
93	TargetP: Prediction of Protein Localization	9:21	Protein Analysis	Protein Databases & Analysis
94	Pfam - Understand the Relation of a Protein to its Family and Clan	15:55	Protein Family Database	Protein Databases & Analysis
95	PROSITE - A Database of Protein Domian, Families and Functional Sites	13:46	Protein Family Database	Protein Databases & Analysis
96	ScanProsite - Scanning Protein for Important Protein Sites Against PROSITE Databas	7:36	Motif & Domain Analysis	Protein Databases & Analysis
97	Marcoil - Predict Coiled Coil Domains in Proteins	4:05	Motif & Domain Analysis	Protein Databases & Analysis
98	SMART	6:44	Motif & Domain Analysis	Protein Databases & Analysis
99	PDB - Ligands	5:23	PDB	Protein Databases & Analysis
100	MODELLER: Most Commonly Used Homology Modelling	36:13:00	3D Structure Prediction	3D Structure Prediction

101	SwissModel: Homology Modeling Through Web-server	12:52	3D Structure Prediction	3D Structure Prediction
102	HHPred	14:09	3D Structure Prediction	3D Structure Prediction
103	M4T	9:26	3D Structure Prediction	3D Structure Prediction
104	IntFold	8:41	3D Structure Prediction	3D Structure Prediction
105	ROBETTA: ab initio Protein Structure Prediciton	14:39	3D Structure Prediction	3D Structure Prediction
106	Homology Modeling Using MOE	12:34	3D Structure Prediction	3D Structure Prediction
107	UCSF CHIMERA	25:23:00	3D Structure Visualization	3D Structure Visualization
108	PyMol	40:48:00	3D Structure Visualization	3D Structure Visualization
109	WhatCheck	8:40	3D Structure Evaluation	3D Structure Evaluation
110	ProCheck	12:40	3D Structure Evaluation	3D Structure Evaluation
111	ERRAT	6:44	3D Structure Evaluation	3D Structure Evaluation
112	Verify3D	8:31	3D Structure Evaluation	3D Structure Evaluation
113	RAMPAGE	3:29	3D Structure Evaluation	3D Structure Evaluation
114	SAVES	5:31	3D Structure Evaluation	3D Structure Evaluation
115	PROSA	10:05	3D Structure Evaluation	3D Structure Evaluation
116	MOE: Protein Ligand Docking	9:23	Molecular Docking	Molecular Docking
117	MOE: Protein Protein Docking	11:38	Molecular Docking	Molecular Docking
118	SwissDock Protein Ligand Docking	19:16	Molecular Docking	Molecular Docking
119	Autodock Vina Protein Ligand Docking	Not Yet Available	Molecular Docking	Molecular Docking
120	MOE: Structure Based Drug Desinging	16:19	Molecular Docking	Molecular Docking
121	MOE: Docking Library of Compounds	19:48	Molecular Docking	Molecular Docking
122	ClusPro Protein Protein Docking	21:44	Molecular Docking	Molecular Docking
123	Patchdock Protein Protein Docking	17:39	Molecular Docking	Molecular Docking
124	PEPFOLD 3 Peptide Structure Prediction	13:14	Molecular Docking	Molecular Docking
125	Zdock Protein Protein/Ligand docking	19:35	Molecular Docking	Molecular Docking
126	MDockPEP Protein Peptide Docking	10:06	Molecular Docking	Molecular Docking
127	Discovery Studio+	12:03	Molecular Docking	Molecular Docking
128	PDBsum Docking Complex Evaluation	18:49	Docking Complex Evaluation	Docking Complex Evaluation
129	Pdbepisa Docking Complex Evaluation	23:27	Docking Complex Evaluation	Docking Complex Evaluation
130	SwissADME	15:31	Docking Complex Evaluation	Docking Complex Evaluation
131	GeneMark: Gene Prediction from Eukaryotic Genomes	16:51	Gene Prediction	Gene Prediction
132	Prodigal: Gene Prediction from Microbial Genomes	25:46:00	Gene Prediction	Gene Prediction
133	GenScan - Prediction of Genes from Green Monkey and Finding a Novel Gene	10:40	Gene Prediction	Gene Prediction
134	AUGUSTUS - Prediction of Novel Genes in Star Fish or Any Genome	17:27	Gene Prediction	Gene Prediction

135	UniRef And Retrieve Protein Clusters	11:35	UniProt	Bioinformatics Databases
136	UniParc And Find the Non-Redundant Entries	4:38	UniProt	Bioinformatics Databases
137	Genome Reference Consortium (GRC)	7:48	NCBI	Bioinformatics Databases
138	BioProject	6:39	NCBI	Bioinformatics Databases
139	BioSystems	4:16	NCBI	Bioinformatics Databases
140	BioSample	2:56	NCBI	Bioinformatics Databases
141	Sequence Read Archive (SRA)	7:14	NCBI	Bioinformatics Databases
142	Introduction to Gene Expression Omnibus Database	9:15	NCBI	Bioinformatics Databases
143	Gene Expression Omnibus - Platforms	5:42	NCBI	Bioinformatics Databases
144	Gene Expression Omnibus - Samples	4:15	NCBI	Bioinformatics Databases
145	Gene Expression Omnibus - Series	4:00	NCBI	Bioinformatics Databases
146	Gene Expression Omnibus - Datasets	4:44	NCBI	Bioinformatics Databases
147	STRING: Comprehensive Protein-Protein Interaction Database	13:16	PPI Database	PPI Database
148	Gene Structure Display Server 2.0	8:35	Genomics Tools	Genomics Tools
149	cular Dyanmics Simulation - Pre-processing of Protein Structure and Removal of Unnc	12:33	Molecular Dynamics Simulations: GROMACS	Molecular Dynamics Simulation
150	pdb2gmx - Construction of Topology File for Simulation	9:00	Molecular Dynamics Simulations: GROMACS	Molecular Dynamics Simulation
151	Defining a Solvant Box for Simulation	4:14	Molecular Dynamics Simulations: GROMACS	Molecular Dynamics Simulation
152	Solvation - Adding Water Molecules in Solvant Box	5:30	Molecular Dynamics Simulations: GROMACS	Molecular Dynamics Simulation
153	Generating Input Run File Replacement of Water Molecues With Ions	6:55	Molecular Dynamics Simulations: GROMACS	Molecular Dynamics Simulation
154	genion - Replacement of Water Molecules With Ions	4:18	Molecular Dynamics Simulations: GROMACS	Molecular Dynamics Simulation
155	Energy Minimization - Relaxing and Fixing the Structure for Simulation	11:25	Molecular Dynamics Simulations: GROMACS	Molecular Dynamics Simulation
156	GRACE - Visualization and Analysis of Minimized Structure	4:11	Molecular Dynamics Simulations: GROMACS	Molecular Dynamics Simulation
157	Equibiliration of Protein Structure NVT ENSEMBLE Phase 1	8:37	Molecular Dynamics Simulations: GROMACS	Molecular Dynamics Simulation
158	Equibiliration of Protein Structure NPT ENSEMBLE Phase 2	8:09	Molecular Dynamics Simulations: GROMACS	Molecular Dynamics Simulation
159	mdrun - Executing Simulation Analysis	3:46	Molecular Dynamics Simulations: GROMACS	Molecular Dynamics Simulation
160	Virulence Factor Database		Vaccine Development	Drug Designing & Discovery
161	Database of Essential Genes		Vaccine Development	Drug Designing & Discovery
162	Drug Databank		Vaccine Development	Drug Designing & Discovery
163	Sortaller		Vaccine Development	Drug Designing & Discovery
164	Algpred		Vaccine Development	Drug Designing & Discovery
165	Allertop		Vaccine Development	Drug Designing & Discovery
166	Vaxijen		Vaccine Development	Drug Designing & Discovery
167	Antigenpro		Vaccine Development	Drug Designing & Discovery
168	CD-HIT		Vaccine Development	Drug Designing & Discovery

169	Netctl1.2		Vaccine Development	Drug Designing & Discovery
170	MHC I		Vaccine Development	Drug Designing & Discovery
171	MHC II		Vaccine Development	Drug Designing & Discovery
172	Netmhc II		Vaccine Development	Drug Designing & Discovery
173	Galaxy Refine		Vaccine Development	Drug Designing & Discovery
174	Modrefiner		Vaccine Development	Drug Designing & Discovery
175	IEDB Conservancy		Vaccine Development	Drug Designing & Discovery
176	IEDB Immunogenicity		Vaccine Development	Drug Designing & Discovery
177	Toxinpred		Vaccine Development	Drug Designing & Discovery
178	Elliprosuite		Vaccine Development	Drug Designing & Discovery
179	Doscotope2.0		Vaccine Development	Drug Designing & Discovery
180	BCpreds		Vaccine Development	Drug Designing & Discovery
181	Bepipred		Vaccine Development	Drug Designing & Discovery
182	ABCpred		Vaccine Development	Drug Designing & Discovery
183	Cofactor		Vaccine Development	Drug Designing & Discovery
184	Castp		Vaccine Development	Drug Designing & Discovery
185	C-Immsim		Vaccine Development	Drug Designing & Discovery
186	Jcat		Vaccine Development	Drug Designing & Discovery
187	IFNepitope		Vaccine Development	Drug Designing & Discovery
188	Maestro		Vaccine Development	Drug Designing & Discovery
189	SnapGene		Vaccine Development	Drug Designing & Discovery
190	DNAstar		Vaccine Development	Drug Designing & Discovery
191	CLC Sequence Viewer		Vaccine Development	Drug Designing & Discovery
192	Why Python in Bioinformatics	9:16	Introduction	Python
193	Introduction to Python and it's Intallation	8:25	Introduction	Python
194	Comments	5:42	Introduction	Python
195	Basic Input and output	15:37	Introduction	Python
196	Mathematical Operations	7:20	Introduction	Python
197	Strings	21:51	Iterable Objects	Python
198	Dictionaries	10:57	Iterable Objects	Python
199	Lists	28:47:00	Iterable Objects	Python
200	Lists(pt 2) and Tuples	10:37:00	Iterable Objects	Python
201	Sets	7:35	Iterable Objects	Python
202	If-Else	9:19	Control Flow	Python

203	For Loop and calc of Mol. weight	10:56	Control Flow	Python
204	While Loop	9:37	Control Flow	Python
205	Reading Files	13:45	File Handling	Python
206	CSV	8:41	File Handling	Python
207	Writing Files	7:17	File Handling	Python
208	Consolidate(merge) multiple DNA and Protein Sequences into one FASTA file	9:24	File Handling	Python
209	OS	31:47:00	File Handling	Python
210	Function	26:41:00	Functions & Modules	Python
211	With	8:50	Functions & Modules	Python
212	Error Handling	15:31	Error Handling	Python
213	Introduction to BioPython & Installation	10:18	Introduction	BioPython
214	Bio.Seq Create a Seq Object	7:38	Sequence Analysis	BioPython
215	Bio.Seq Seq Object Behaves Like a String	9:54	Sequence Analysis	BioPython
216	Bio.Seq Central Dogma in Play Through Python	8:41	Sequence Analysis	BioPython
217	Bio.Seq Unkown & Mutable Sequences	6:53	Sequence Analysis	BioPython
218	Bio.Alphabet Understanding the Alphabets of Biology	7:37	Sequence Analysis	BioPython
219	Bio.Alphabet IUPAC and Types of Sequence Representations	10:34	Sequence Analysis	BioPython
220	Bio.Alphabet Concatenation of Multiple Seq Records Using Generic Alphabets	9:47	Sequence Analysis	BioPython
221	SeqRecord Creating Seq Records	12:27	Sequence Analysis	BioPython
222	SeqRecords & FASTA	4:35	Sequence Analysis	BioPython
223	SeqRecords & GenBank	3:28	Sequence Analysis	BioPython
224	SeqRecord Formatting Records	3:47	Sequence Analysis	BioPython
225	SeqRecord Comparison & Reading Multiple FASTA Files from Directory	5:47	Sequence Analysis	BioPython
226	SeqIO Reading a Sequence File	10:32	Sequence Data Parsing	BioPython
227	SeqIO Parsing a Sequence File	7:16	Sequence Data Parsing	BioPython
228	SeqIO Parsing a Compressed Sequence File & Creating a Dictionary of Sequen	6:10	Sequence Data Parsing	BioPython
229	SeqIO - Write Sequences and SeqRecords Into Files	11:42	Sequence Data Parsing	BioPython
230	SeqIO Extracting Annotations and Pattern-wise Sequence Data Extraction	10:35	Sequence Data Extraction	BioPython
231	AlignIO - Reading and Parsing a Multiple Sequence Alignment File	8:19	Alignment Parsing and Analysis	BioPython
232	AlignIO - Writing Alignments and Multiple Sequence Alignment Records	5:28	Alignment Parsing and Analysis	BioPython
233	AlignIO - Conversion of Alignment Formats	4:01	Alignment Parsing and Analysis	BioPython
234	AlignIO - Manipulating Alignments	2:57	Alignment Parsing and Analysis	BioPython
235	AlignIO - ClustalW Python Wrapper - Align Multiple Sequences	7:47	Alignment Parsing and Analysis	BioPython
236	AlignIO - Pairwise2 - Align Two Sequences	7:31	Alignment Parsing and Analysis	BioPython

237	AlignIO - Information Mapping of Alignments	2:33	Alignment Parsing and Analysis	BioPython
238	AlignIO - Format Alignments	3:55	Alignment Parsing and Analysis	BioPython
239	AlignIO - Slicing Alignments	6:05	Alignment Parsing and Analysis	BioPython
240	Bio.Blast - Querying NCBI BLAST Through Python	11:41	BLAST Database Searching	BioPython
241	Bio.Blast - Parsing BLAST Results	14:51	Parsing BLAST results	BioPython
242	Bio.Entrez - Accessing ENTREZ Using Python	9:32	Biological Data Retrieval	BioPython
243	Bio Entrez Use Esummary To Get Summary Of Your Accessions	8:59	Biological Data Retrieval	BioPython
244	Bio.Entrez - Use EFetch to Download Complete Records	13:56	Biological Data Retrieval	BioPython
245	Bio.Entrez - Use EGQuery to Do Global Quries for Search Counts	7:24	Biological Data Retrieval	BioPython
246	Bio.Entrez - Use Elink To Search For Database Links Of Records	3:41	Biological Data Retrieval	BioPython
247	Bio.Entrez - Use ESearch to Search the Entrez Databases	8:20	Biological Data Retrieval	BioPython
248	Bio.Entrez - Use Espell To Get Correct Spellings For Your Search Terms	5:21	Biological Data Retrieval	BioPython
249	Bio.Entrez - Download GenBank and Entrez Records	14:17	Biological Data Retrieval	BioPython
250	Bio.Entrez - Taxonomy Database Searching	7:05	Biological Data Retrieval	BioPython
251	Bio.Entrez - Download PubMed Articles	8:28	Biological Data Retrieval	BioPython
252	Bio.Entrez - Use EFetch to Download Complete Records	13:56	Biological Data Retrieval	BioPython
253	Bio.PDB - Reading a PDB (3D Structure) File	11:59	Parsing a PDB Structure file	BioPython
254	Phylo - Calculating Distance Matrix Between Sequences For Phylogenetic Ana	4:18	Phylogenetic Analysis	BioPython
255	Bio.Phylo - Converting Phylogenetic Tree Data Formats	3:28	Phylogenetic Analysis	BioPython
256	Bio.Phylo - Printing Out Phylogenetic Tree In Ascii	2:17	Phylogenetic Analysis	BioPython
257	Bio.Phylo - Reading Phylogenetic Trees	6:28	Phylogenetic Analysis	BioPython
258	Bio.Phylo - Visualization And Manipulation Of Phylogenetic Trees	9:36	Phylogenetic Analysis	BioPython
259	Bio.Phylo - Writing Out Phylogenetic Data	4:04	Phylogenetic Analysis	BioPython
260	Bio.motifs - Creating a WebLogo of Motifs		Protein Sequence Analysis	BioPython
261	Bio.motifs - MEME Analysis		Protein Sequence Analysis	BioPython
262	Introduction to R in Bioinformatics &R Installation	9:47	Introduction	R
263	The R User Interface	6:23	Introduction	R
264	Comments	4:16	Introduction	R
265	Variable Declaration and Objects	5:24	Variables & Functions	R
266	Built-in Functions & ARGS	4:31	Variables & Functions	R
267	Sample & Replacement	9:09	Variables & Functions	R
268	Write Your Own Functions And Arguments	5:39	Variables & Functions	R
269	Scripts	7:36	Variables & Functions	R
270	Packages	4:00	Packages	R

271	Install Packages	5:25	Packages	R
272	Library & Initialize Packages	2:27	Packages	R
273	Getting Help with Help Packages	3:42	Packages	R
274	Atomic Vectors	2:42	Vectors & Data Types	R
275	Doubles	3:30	Vectors & Data Types	R
276	Integers	3:23	Vectors & Data Types	R
277	Characters	4:43	Vectors & Data Types	R
278	Logicals	2:27	Vectors & Data Types	R
279	Attributes and Names	4:46	Vectors & Data Types	R
280	Dim & Dimensions	5:46	Vectors & Data Types	R
281	Matrix & Matrices	4:42	Vectors & Data Types	R
282	Arrays	3:42	Vectors & Data Types	R
283	Class	3:12	Vectors & Data Types	R
284	Factors	6:40	Vectors & Data Types	R
285	Coercion	4:27	Vectors & Data Types	R
286	Lists	6:41	Vectors & Data Types	R
287	Data Frames	6:30	Biological Data Analysis	R
288	Loading Biological Data	7:55	Biological Data Analysis	R
289	Saving Biological Data	5:26	Biological Data Analysis	R
290	R Notation & Selecting Values from Biological Dataset	4:09	Biological Data Analysis	R
291	Positive Integers for subsetting Biological Dataset(DataFrame)	5:25	Biological Data Analysis	R
292	Negative Integers for subsettingBiological Dataset(DataFrame)	5:28	Biological Data Analysis	R
293	Zero Notation for subsetting Biological Datasets (DataFrames)	1:09	Biological Data Analysis	R
294	Blank Spaces For Biological Data Subsetting	3:20	Biological Data Analysis	R
295	Dollar Signs for Biological Dataset Subsetting	2:58	Biological Data Analysis	R
296	Modifying Values in Existing DataFrames/Datasets	7:06	Biological Data Analysis	R
297	NA Values in Biological Dataset	5:24	Biological Data Analysis	R
298	Figuring out NA Values in Biological Dataset	2:06	Biological Data Analysis	R
299	Logical Subsetting in Biological Datasets	9:45	Biological Data Analysis	R
300	If Else Statement	4:15	Control Flow	R
301	Comments	4:16	Introduction	R
302	For Loops & Biological Data Binding	16:30	Control Flow	R
303	& Reading Multiple Biological Datasetswhile Loops & Reading Multiple Biolog	16:16	Control Flow	R
304	Introduction to ggplot2 for Biological Datasets	10:46	Data Visualization: ggplot2	R

305	ggplot2: Key components	8:25	Data Visualization: ggplot2	R
306	ggplot2: Human Mitochondrial Proteome & Aesthetics (Size, Shape, Color)	26:02:00	Data Visualization: ggplot2	R
307	ggplot2: Facetting of Human Genome	22:25	Data Visualization: ggplot2	R
308	ggplot2: Smooth Out the Biological Data	8:43	Data Visualization: ggplot2	R
309	ggplot2: Boxplots for Human Mitochondrial Proteome	7:55	Data Visualization: ggplot2	R
310	ggplot2 :Histograms for Human Mitochondrial Pattern Finding	6:02	Data Visualization: ggplot2	R
311	gplot2: Frequency Plots for Human Mitochondrial Information Frequency Minir	6:12	Data Visualization: ggplot2	R
312	ggplot2: Bar Charts Human Mitochondrial Knowledge Mining	10:43	Data Visualization: ggplot2	R
313	ggplot2 - Scaling and Limiting Data Visualization	3:53	Data Visualization: ggplot2	R
314	ggplot2 - Changing Labels and Finalizing Visualization	8:41	Data Visualization: ggplot2	R
315	ggtree - Phylogenetic Tree Visualization	5:41	Data Visualization: ggplot2	R
316	ggplot2 - Saving the Visualizations in High Resolution	4:44	Data Visualization: ggplot2	R
317	Introduction to Linux for Bioinformatics	22:31	Getting Familiar With Linux	Linux
318	PWD - Print Working Directory	1:26	Getting Familiar With Linux	Linux
319	CD - Changing Directories	5:03	Getting Familiar With Linux	Linux
320	MKDIR - Making Directories	8:12	Getting Familiar With Linux	Linux
321	MV - Moving Files, Directories and Data	5:10	Getting Familiar With Linux	Linux
322	RM - Deleting Files and Directories	1:23	Getting Familiar With Linux	Linux
323	Which & Whereis - Find Programs You Installed	3:43	Getting Familiar With Linux	Linux
324	Find - Finding User Created Files	3:38	Getting Familiar With Linux	Linux
325	LS - Lisiting Files and Directories on Linux	6:45	Getting Familiar With Linux	Linux
326	Piping and Redirection of Data	3:34	Piping and Control Data Flow	Linux
327	Cat - Visualization and Inspection of Text Data	3:55	Pre-processing Biological Datasets	Linux
328	Head - Reading Specified Number of Lines from Top	3:49	Pre-processing Biological Datasets	Linux
329	Tail- Reading Specified Number of Lines from Bottom	2:22	Pre-processing Biological Datasets	Linux
330	Touch - Modifying File Statistics and Creating Files	7:03	Pre-processing Biological Datasets	Linux
331	Stat - Statistics of File & Directories	2:46	Pre-processing Biological Datasets	Linux
332	Wget - Retrieval of Genome Assemblies	6:48	Pre-processing Biological Datasets	Linux
333	Curl - Retrieval of Bioinformatics Files	2:25	Pre-processing Biological Datasets	Linux
334	Vim - Create and Edit Text Files	5:58	Pre-processing Biological Datasets	Linux
335	Diff - Find Sequence Differences in Files	2:34	Pre-processing Biological Datasets	Linux
336	GZIP - Compress and Archive FilesEfficiently	6:05	Processing and Analysis of Biological Datasets	Linux
337	GUNZIP - Extract Compressed Content	2:14	Processing and Analysis of Biological Datasets	Linux
338	Tar - Create Archives of Genome Data	4:18	Processing and Analysis of Biological Datasets	Linux

339	Grep - Finding Uncharacterized Proteins in Human Genome	8:55	Processing and Analysis of Biological Datasets	Linux
340	Cut - Subsetting Required Textual Data from Text Files	5:48	Processing and Analysis of Biological Datasets	Linux
341	Sort - Sorting Data	4:22	Processing and Analysis of Biological Datasets	Linux
342	Uniq - Finding Unique Data Items	10:32	Processing and Analysis of Biological Datasets	Linux
343	WC - Statistcs of the Data Within File	2:45	Processing and Analysis of Biological Datasets	Linux
344	CP - Copying Files and Files Contents	3:43	Processing and Analysis of Biological Datasets	Linux
345	Column - Proper Visualiation of Delimited Datasets	4:38	Processing and Analysis of Biological Datasets	Linux
346	Introduction to BioConductor		BioConductor	R
347	Installing Packages from BioConductor		BioConductor	R
348	Retrieving Biological Sequence in R		Sequence Retrieval	R
349	Reading and Writing the FASTA File		Bioinformatics File Parsing and Writing	R
350	Getting the Detail of a Sequence Composition		Sequence Analysis	R
351	Pairwise Sequence Alignment		Sequence Alignment	R
352	Multiple Sequence Alignment		Sequence Alignment	R
353	Phylogenetic Analysis and Tree Plotting		Phylogenetics Analysis	R
354	Handling BLAST Results		Database Searching	R
355	Pattern Finding in a Sequence		Sequence Analysis	R
356	Performing ID Conversions		BioConductor	R
357	Handling Annotation Databases in R		BioConductor	R
358	Performing ID Conversions		BioConductor	R
359	The KEGG Annotation of Genes		Gene Enrichment Analysis	R
360	The GO Annotation of Genes		Gene Enrichment Analysis	R
361	The GO Enrichment of Genes		Gene Enrichment Analysis	R
362	The KEGG Enrichment of Genes		Gene Enrichment Analysis	R
363	BioConductor in the Cloud		BioConductor	R
364	Introduction to dplyr		Data Transformation with dplyr	R
365	Filter Rows with filter()		Data Transformation with dplyr	R
366	Select Columns with select()		Data Transformation with dplyr	R
367	Add New Variables with mutate()		Data Transformation with dplyr	R
368	Grouped Summaries with summerize()		Data Transformation with dplyr	R
369	Grouped Mutates (and Filters)		Data Transformation with dplyr	R
370	Introduction to tidyr		Tidy Data with tidyr	R
371	Data Tidying		Tidy Data with tidyr	R
372	Data Spreading & Gathering		Tidy Data with tidyr	R

373	Data Separating & Pull		Tidy Data with tidyr	R
374	Missing Values		Tidy Data with tidyr	R
375	Case Study with tidyr		Tidy Data with tidyr	R
376	Nontidy Data		Tidy Data with tidyr	R
377	Introduction to ArrayExpress - Getting Started With MicroArray Analysis	9:55	MicroArray Analysis: BioConductor	R
378	Introduction to BioConductor - Installating MicroArray Packages	5:05	MicroArray Analysis: BioConductor	R
379	Getting Started with R Studio Project for MicroArray Analysis	4:50	MicroArray Analysis: BioConductor	R
380	Downloading MicroArray Raw Data from ArrayExpress	4:19	MicroArray Analysis: BioConductor	R
381	Creating Raw Intensities MicroArray Data Structure and Log2 Transformation	14:40	MicroArray Analysis: BioConductor	R
382	Principle Component Analysis of Raw Expression Dataset	15:44	MicroArray Analysis: BioConductor	R
383	Plot Visualization of Raw Intesnity Data to Interpret the Median Intensities of the Samples		MicroArray Analysis: BioConductor	R
384	ArrayQualityMetrics - Automated Quality Control for Microarray Datasets		MicroArray Analysis: BioConductor	R
385	Annotating the Probe IDs with Gene Symbols and Names		MicroArray Analysis: BioConductor	R
386	Excluding Probe IDs with Multiple Mappings from the ExpressionSet		MicroArray Analysis: BioConductor	R
387	Filtering out the Genes that are Above Threshold		MicroArray Analysis: BioConductor	R
388	Heatmap Visualization of the Normalized Gene Expression Values	11:51	MicroArray Analysis: BioConductor	R
389	Intensity-based Filteration of Low-Intesnity Transcripts		MicroArray Analysis: BioConductor	R
390	Normalization of Raw Intesnities Values		MicroArray Analysis: BioConductor	R
391	Relative Log Expression Analysis and Visualization		MicroArray Analysis: BioConductor	R
392	Removal of the Probe IDs that Match to Multiple Genes		MicroArray Analysis: BioConductor	R
393	obust Multi-Array Summarization and Background Correction of the Raw MicroArray Data		MicroArray Analysis: BioConductor	R
394	LIMMA - Data Preparation for Linear Modelling		MicroArray Analysis: BioConductor	R
395	Factors Prepartion		MicroArray Analysis: BioConductor	R
396	Analysis of Gene Expression Levels of a Single Gene Among Different Conditions		MicroArray Analysis: BioConductor	R
397	LIMMA - Applying Linear Model on a Single Gene Expression Data		MicroArray Analysis: BioConductor	R
398	Data Visualization of the Gene Expression of a Single Gene		MicroArray Analysis: BioConductor	R
399	Applying t-test to Find if Genes are Diffentially Expression		MicroArray Analysis: BioConductor	R
400	LIMMA - Applying Linear Model for Differential Gene Expression Analysis		MicroArray Analysis: BioConductor	R
401	Extraction of Differentially Expressed Genes from the Fitted Linear Model		MicroArray Analysis: BioConductor	R
402	Setting a Threshold for Differentially Expressed Genes		MicroArray Analysis: BioConductor	R
403	Volcano Plot - Visualization of the Genes that are Diffentially Expressed	8:36	MicroArray Analysis: BioConductor	R
404	Matching the DEGs with Background Genes to Find Overlap		MicroArray Analysis: BioConductor	R
405	topGO - Gene Enrichment & Ontology Analysis		MicroArray Analysis: BioConductor	R
406	topGO - KEGG & REACTOME Pathway Analysis		MicroArray Analysis: BioConductor	R