

Intellectual Property Rights

Patent

Trademark

Industrial Design

Geographical Indication

Copyright

EECE401 Senior Design I
Electrical Engineering and Computer Science
Howard University
Dr. Charles Kim
www.mwfr.com/SD1920.html

What is Intellectual Property ?

⌘ Patent

⌘ Trademark

⌘ Industrial Design

⌘ Geographical Indication

⌘ Copyright

⌘ Reference: This section is a summary of the “What is Intellectual Property” from World Intellectual Property Organization (WIPO) [wipo_pub_450.pdf](#)

What is Intellectual Property ?

⌘ Creations of the mind

- ⊞ Inventions

- ⊞ Literary and artistic works

- ⊞ Symbols, names, and images used in commerce

⌘ 2 categories

- ⊞ Industrial Property

 - ⊞ Patents for inventions

 - ⊞ Trademarks

 - ⊞ Industrial Designs and Geographical Indications

- ⊞ Copyright

 - ⊞ Literary works: novels, poems, and plays

 - ⊞ Films

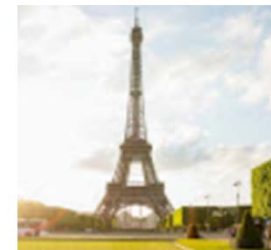
 - ⊞ Music

 - ⊞ Artistic Works: Drawings, paintings, photographs, and sculptures

 - ⊞ Architectural Designs

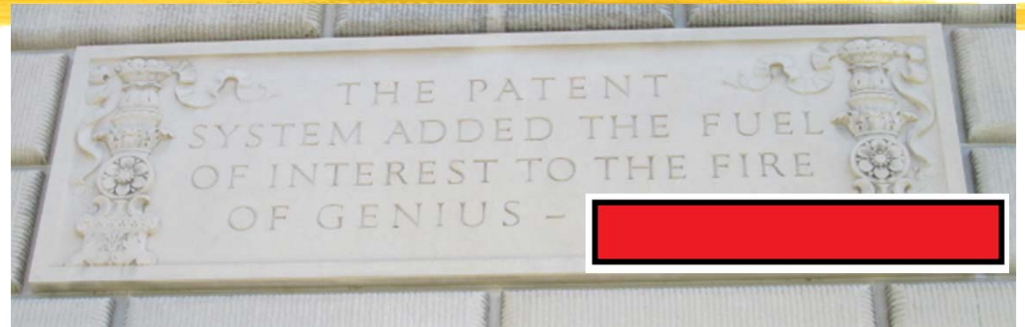
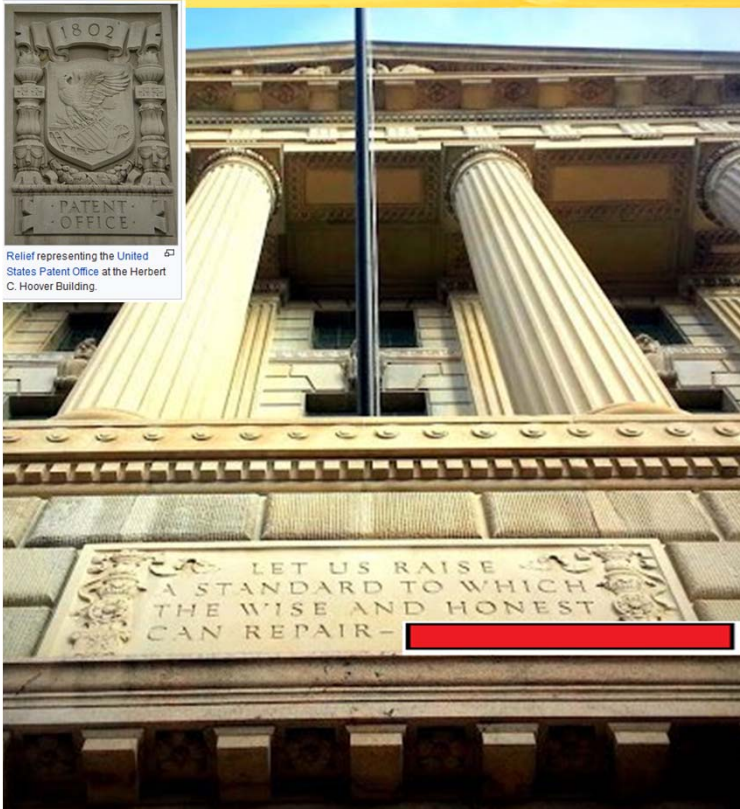
What are *Intellectual Property Rights*?

- ⌘ Allows creators, or owners, of (1) **patents**, (2) **trademarks**, or (3) **copyrighted works** to benefit from their own works or investment in creation
- ⌘ Universal Declaration of (), Article 27:
 - ☑ Right to benefit from the protection of **moral and material interests** resulting from authorship of scientific, literary or artistic productions.
- ⌘ () Convention for the **Protection of Industrial Property** (1883)
- ⌘ () Convention for the **Protection of Literary and Artistic Works** (1888) – cf. U.S. Copyright Act of 1976 (U.S. adoption of Berne Convention on 3/1/1989)



What are Intellectual Property Rights?

⌘ Why promote and protect intellectual property?



What are Intellectual Property Rights?

⌘ Why promote and protect intellectual property?

- ⊞ First, the **progress and well-being of humanity** rest on its capacity to **create and invent new works** in the areas of technology and culture.
- ⊞ Second, the **legal protection of new creations** encourages **the commitment of additional resources** for further innovation.
- ⊞ Third, the promotion and protection of intellectual property **spurs economic growth**, creates new jobs and industries, and **enhances the quality** and enjoyment of life.

What is a Patent?

⌘ A patent

- ⊞ an **exclusive right** granted for an invention – a **product** or **process** that provides a new way of doing something, or that offers a new technical solution to a problem.
- ⊞ provides patent owners with **protection** for their inventions.
- ⊞ Protection granted for a **limited period**, generally **20 years**.

What is a Patent?

⌘ Patent Types

- ☒ **Utility Patents** – new and useful product/process
- ☒ **Design Patents** – new design for an article of manufacture
- ☒ **Plant Patents** – production of any distinct and new variety of plant

What is a Patent?

⌘ What kind of protection?

- ☑ Patent cannot be **commercially made, used, distributed or sold** without the patent owner's consent.
- ☑ Patent rights, **enforced in courts** that hold the authority to stop **patent infringement**.
 - ☒ a court can also declare a patent **invalid** upon a successful challenge by a third party.



What is a Patent?

⌘ What Role do Patents Play in everyday life?

⏏ Patented inventions in every aspect of human life

- ⊗ **electric lighting** (patents held by Edison and Swan)
- ⊗ **sewing machines** (patents held by Howe and Singer)
- ⊗ **magnetic resonance imaging (MRI)** (patents held by Damadian)
- ⊗ **iPhone** (patents held by Apple).

(12) **United States Patent** Jobs et al.

(54) **TOUCH SCREEN DEVICE, METHOD, AND GRAPHICAL USER INTERFACE FOR DETERMINING COMMANDS BY APPLYING HEURISTICS**

(75) Inventors: **Steven P. Jobs**, Palo Alto, CA (US); **Scott Forstall**, Mountain View, CA (US); **Greg Christie**, San Jose, CA (US); **Stephen O. Lemay**, San Francisco, CA (US); **Scott Herz**, San Jose, CA (US); **Marcel van Os**, San Francisco, CA (US); **Bas Ording**, San Francisco, CA (US); **Gregory Novick**, Santa Clara, CA (US); **Wayne C. Westerman**, San Francisco, CA (US); **Imran Chaudhri**, San Francisco, CA (US); **Patrick Lee Coffman**, Menlo Park, CA (US); **Kenneth Kocienda**, Sunnyvale, CA (US); **Nitin K. Ganatra**, San Jose, CA (US); **Freddy Allen Anzures**, San Francisco, CA (US); **Jeremy A. Wyld**, San Jose, CA (US); **Jeffrey Bush**, San Jose, CA (US); **Michael Matas**, San Francisco, CA (US); **Paul D. Marcos**, Los Altos, CA (US); **Charles J. Pisula**, San Jose, CA (US); **Virgil Scott King**, Mountain View, CA (US); **Chris Blumenberg**, San Francisco, CA (US); **Francisco Ryan Tolmasky**, Cupertino, CA (US); **Richard Williamson**, Los Gatos, CA (US); **Andre M. J. Boule**, Sunnyvale, CA (US); **Henri C. Lamiroux**, San Carlos, CA (US)

(73) Assignee: **Apple Inc.**, Cupertino, CA (US)



Figure 4A

What is a Patent?

⌘ How is a patent granted?

☒ 1 File a patent application.

☒ 2 Content of the application

☒ Title of the invention, as well as an indication of its **Technical Field**.

☒ **Background and a description** of the invention, in clear language and enough detail that “an individual with an average understanding of the field could use or reproduce the invention.”

☒ Visual materials – **drawings, plans or diagrams** – that describe the invention in greater detail.

☒ **“claims”**, that is, information to help determine the extent of protection to be granted by the patent.

☒ 3 Examination by Patent Examiners

Patent – Front Page

researchguides.case.edu/patents



US006849223B2



(12) **United States Patent**
Dean et al.

Title

(10) Patent No.: **US 6,849,223 B2**
(45) Date of Patent: **Feb. 1, 2005**

Patent Number and Issued Date

(54) **FABRICATION OF A POLYMERIC PROSTHETIC IMPLANT**

(73) Inventors: **David Dean, Shaker Heights, OH (US); Malcolm Cooke, Richfield, OH (US)**

Inventors

(73) Assignee: **Case Western Reserve University, Cleveland, OH (US)**

Assignee

(* Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 372 days.

OTHER PUBLICATIONS

International Search Report dated Aug. 30, 2002.
* cited by examiner

Primary Examiner: Stefan Staicovici
(74) Attorney, Agent, or Firm: Calfee, Halter & Griswold LLP

References Cited

(21) Appl. No.: **10/127,019**

(22) Filed: **Apr. 19, 2002**

ABSTRACT

Processes for fabricating a customized, three-dimensional, bioerodable, polymeric prosthetic implant are provided. In a highly preferred embodiment, the prosthetic implant has a porous network. The method employs a stereolithography process in which a solution comprising chips of one or more polymers and a photoinitiator is placed in a container in the stereolithography instrument. The solution is exposed to UV light energy to produce a pattern of cross-linked and non-cross-linked polymeric regions corresponding to a cross-sectional image of the three-dimensional CAD image.

Filing Date

Prior Publication Data

US 2002/0171178 A1 Nov. 21, 2002

Related U.S. Application Data

(60) Provisional application No. 60/284,803, filed on Apr. 19, 2001.

(51) Int. Cl.⁷ **B29C 35/08**

(52) U.S. Cl. **264/400; 264/401; 264/482; 264/494; 156/272.8; 156/273.5; 156/275.5; 156/298; 156/303.1; 156/379.8**

(58) Field of Search 264/400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000

References Cited

U.S. PATENT DOCUMENTS

4996,010 A * 2/1991 Modrek 264/401

15 Claims, 5 Drawing Sheets





⌘ Functions of the USPTO

- ⊞ **grants patents** for the protection of inventions and to **register** trademarks.
- ⊞ **examines applications**
- ⊞ **publishes** patent information, records assignments of patents,
- ⊞ **maintains** search files of U.S. and foreign patents,
- ⊞ **maintains** a search room for public use in examining issued patents and records.

⌘ Patent Laws

☒ The **Constitution of the United States**

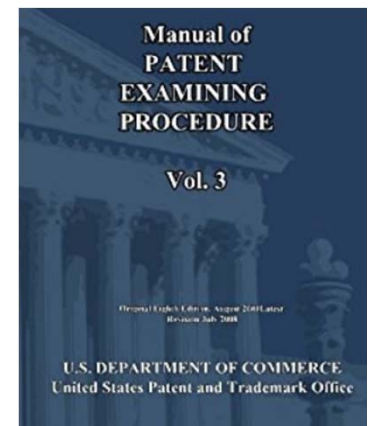
☒ Article I, section 8, "Congress shall have power . . . to promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries."

☒ The first patent law in 1790.

☒ Revision enacted July 19, 1952, and effect January 1, 1953 → codified in **Title 35, United States Code**.

☒ November 29, 1999, **American Inventors Protection Act of 1999 (AIPA)**.

⌘ The patent law specifies the **subject matter** for which a patent may be obtained and the **conditions for patentability**.



⌘ What can/cannot be Patented

☒ The subject matter must be “**Useful.**”

☒ The term “useful” in this connection refers to the condition that the subject matter has a **useful purpose** and also includes **operativeness**. (a machine which will not operate to perform the intended purpose would not be called useful, and therefore would not be granted a patent)

☒ **The laws of nature, physical phenomena, and abstract ideas are not patentable** subject matter.

☒ A patent **cannot be obtained upon a mere idea or suggestion**. A complete **description of the actual machine** or other subject matter is required.

☒ **Novelty** and **Non-Obviousness**

⌘ **Novelty** and **Non-Obviousness**, Conditions for Obtaining a Patent

⊞ Must be **new** as defined in the patent law, which provides that an invention **cannot be patented if:**

- ⊗ “(1) the claimed invention was patented, described in a printed publication, or in public use, on sale, or otherwise available to the public before the effective filing date of the claimed invention”
or
- ⊗ “(2) the claimed invention was described in a patent issued [by the U.S.] or in an application for patent published or deemed published [by the U.S.],”

⌘ **Novelty** and **Non-Obviousness**, Conditions for Obtaining a Patent

- ☒ Term “**otherwise available to the public**” refers to other types of disclosures of the claimed invention such as, for example,
 - ☒ an oral presentation at a scientific meeting,
 - ☒ a demonstration at a trade show,
 - ☒ a lecture or speech,
 - ☒ a statement made on a radio talk show,
 - ☒ a YouTube™ video, or
 - ☒ a website or
 - ☒ other on-line material.

Example Patent

200 patents

Well as per the information available on the Web an iPhone has about **200 patents**. Weird as I was expecting more but this figure is based on some patent based research. Anyway this is just some data on some website. We can't believe anything on the Web unless it comes from official sources.

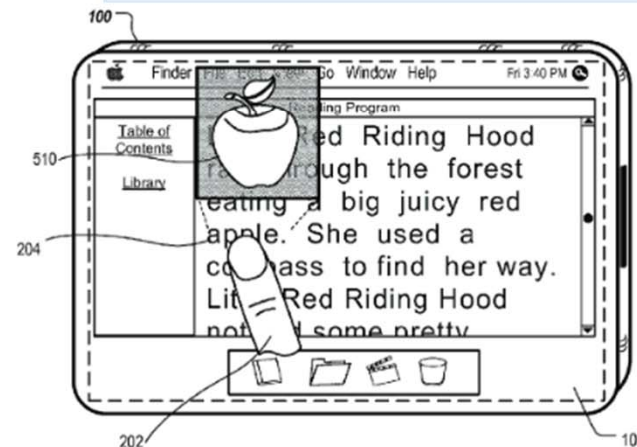
[How many patents does an iPhone have? - Quora](https://www.quora.com/How-many-patents-does-an-iPhone-have)
<https://www.quora.com/How-many-patents-does-an-iPhone-have>

Assist Features for Content Display Device:

Patent # US20110167350, filed by Apple in January 2010, which addresses education by allowing users to interact with text via a touch-sensitive display in order to learn more about the text (see drawing).



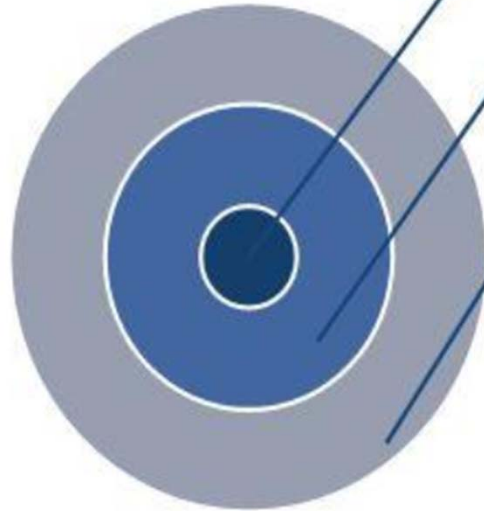
ip-science.thomsonreuters.com/m/pdfs/iphone-report.pdf



Apple Patents

) | ip-science.thomsonreuters.com/m/pdfs/iphone-report.pdf

APPLE CITATION NEIGHBORHOOD CHART 2 EXAMPLE PATENTS FROM NEIGHBORHOOD SEARCH ON APPLE PATENT US7479949



Source Patent:

Apple US7479949

Touch screen device, method, and graphical user interface for determining commands by applying heuristics

Direct Citation Landscape: 13 Patents

E.g. Autodesk US5528260
Method and apparatus for proportional auto-scrolling

Neighborhood Landscape: 224 Patents

E.g. Sony US5406307
Data processing apparatus having simplified icon display

CORE TECHNOLOGY AREAS OF APPLE PATENTS

FIGURE 1

TECHNOLOGY AREA	NUMBER OF INVENTIONS (PATENTS)
iPhone, Smartphone General	416
Camera	279
User Interface	232
Image Display/Screen	149
Battery/Power Control	88
Antenna	75
Calendar	31
Contact Management	15
Voice Control	5

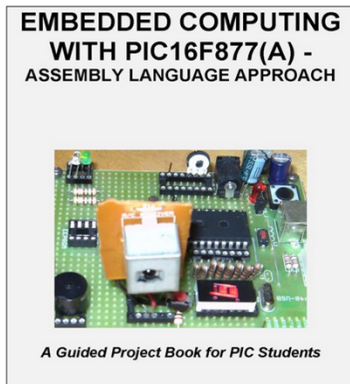
Source: Derwent World Patents Index*

<https://inovorg2011-2.wikispaces.com/file/view/2.1-How+many+patents+does+it+take+to+build+an+iPhone.pdf>

Example - Copyright

Embedded Computing with PIC16F877(A) -Assembly Language Approach
A complete guided project book for PIC students, 2006. p. 475
 by Charles Kim, Ph.D.

Copyright Registration #: [TX0008013944](#)



- [Embedded Computing with PIC 16F877-students](#) - Topics covered, with full assembly download, LED light on/off, Piezo-electric buzzer, Voice synthesizer connection, DC motor control and Bipolar Stepper Motor control application, external serial EEPROM application, Interrupt and digital clock application, A/D conversion and communication, and so on. Again, complete source codes and subroutines for each every application and subject.

Certificate of Registration



This Certificate issued under the seal of the Copyright Office in accordance with title 17, *United States Code*, attests that registration has been made for the work identified below. The information on this certificate has been made a part of the Copyright Office records.

Registration Number
TX 8-013-944
Effective Date of Registration:
 July 30, 2014

Maria A. Pallante

Register of Copyrights, United States of America

Title

Title of Work: Embedded Computing with PIC16F877(A) - Assembly Language Approach

Completion/Publication

Year of Completion: 2006
Date of 1st Publication: September 01, 2006
Nation of 1st Publication: United States

Author

- **Author:** Charles Kim
Author Created: text, photograph(s), computer program
Citizen of: United States

Contemporary Issues which involve Intellectual Property Rights

- ⌘ Patent dispute between Apple and Samsung (on smartphone patents)



- ⌘ Copyright Lawsuit between Oracle and Google (on Java APIs)



- ⌘ Qualcomm suing Apple



HW#2 on Patent and Contemporary Issues (Individual)

- ⌘ Choose 1 of the Litigations
- ⌘ Subject Title: Patent/Copyright Litigation between A and B
- ⌘ **Specific Questions:**
 - ☑ What is the essential technical (i.e., involved patents or copyrights) issue of the litigation ?
 - ☑ What rulings have been made in which U. S. courts ?
 - ☑ How much money was at stake ?
 - ☑ What message does the verdict (or no-verdict) tell design engineers about the intellectual property?



HW#2 on Patent and Contemporary Issues (Individual)

- ⌘ Choose 1 of the lawsuits
- ⌘ Subject Title: Patent/Copyright Litigation between A and B
- ⌘ Assignment Details
 - ☒ Write a technical article (following the principle of “**important things first and at the first paragraph**”) on the subject regarding the focus items → Answer the specific questions.
 - ☒ Summary/Conclusions – First Paragraph
 - ☒ Further details and development of the subject – Main body
 - ☒ Submission: **Word file: lastname_HW2.docx**
 - ☒ Grading: {First paragraph (10) + Entire Report (10) – 0.2*Similarity Score} → **Do not quote**
 - ☒ **Due: M 11/25/2019 (last class) 1:00pm (Submission via email)**
 - ☒ Individual Work