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IBM CORP. (WIP)
c/o WALDER INTELLECTUAL PROPERTY LAW, P.C.
17304 PRESTON ROAD
SUITE 200
DALLAS, TX 75252

| EXAMINER |
|---|
| WISE, OLIVIA M. |

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* CORVILLE O. ALLEN, ROBERTO DELIMA,
THOMAS J. EGGEBRAATEN, ANDREW R. FREED,
MARK G. MEGERIAN, and MARIE L. SETNES[1]

_____

Appeal 2018-000444
Application 14/487,532
Technology Center 1600

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Before DONALD E. ADAMS, RYAN H. FLAX, and
RACHEL H. TOWNSEND, *Administrative Patent Judges*.

FLAX, *Administrative Patent Judge*.

DECISION ON APPEAL

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[1] Appellants identify the Real Party in Interest as "International Business Machines Corporation." Appeal Br. 2.

This is a decision on appeal under 35 U.S.C. § 134(a) involving claims to a method and product for implementing a cognitive system that outputs a treatment recommendation for a medical malady based on treatment toxicity for a specified patient. Claims 1–5, 9–15, and 19–22 are on appeal as rejected under 35 U.S.C. § 101. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

## STATEMENT OF THE CASE

The Specification states, "[t]he present application relates generally to an improved data processing apparatus and method and more specifically to mechanisms for utilizing toxicity level evaluations when recommending treatments using a question answering system." Spec. ¶ 1. The Specification further states, "recent research has been directed to generating Question and Answer (QA) systems which may take an input question, analyze it, and return results indicative of the most probable answer to the input question. QA systems provide automated mechanisms for searching through large sets of sources of content . . . ." *Id.* ¶ 2. The Specification explains, "Examples, of QA systems are Siri® from Apple®, Cortana® from Microsoft®, and the Watson™ system available from International Business Machines (IBM®) Corporation of Armonk, New York."[2] *Id.* ¶ 3.

The Specification further states, "it is assumed that the treatments/drugs being considered have well-understood toxicities and that

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[2] We note also that two months after the filing date of the appealed application (i.e., Nov. 2014) Amazon launched its Alexa/Echo product, which is similar to the disclosed Siri and Cortana products.

the toxicity information is readily available and up to date in the QA

system," and also that "[a]ny medical treatment is intended to be within the

spirit and scope of the illustrative embodiments" of the invention, and also

that "the mechanisms of the illustrative embodiments may be used with

regard to any medical or psychological condition." *Id.* ¶¶ 18, 23. Further,

"[a]ny medical or psychological condition for which the toxicity of a

treatment plan to a patient is of concern may be the subject of the

mechanisms of the illustrative embodiments." *Id.* ¶ 23.

The Specification further states, "mechanisms described herein may

be implemented as specialized hardware, software executing on general

purpose hardware, software instructions stored on a medium such that the

instructions are readily executable by specialized or general purpose

hardware, a procedure or method for executing the functions, or a

combination of any of the above." *Id.* ¶ 31. The Specification further states,

"computer readable program instructions may be provided to a processor of

a general purpose computer, special purpose computer, or other

programmable data processing apparatus." *Id.* ¶ 39.

Claims 1 is representative and is reproduced below:

> 1. A method, in a data processing system comprising
> a processor and a memory comprising instructions executed by
> the processor which configure the data processing system to
> implement a cognitive system that outputs a treatment
> recommendation for a medical malady based on treatment
> toxicity for a specified patient, the method comprising:
>
> receiving, by a question answering system of the cognitive
> system, an input question specifying the medical malady of the
> specified patient and requesting a treatment recommendation for
> the medical malady;

generating, by the question answering system of the cognitive system, a set of candidate treatments for the medical malady based on a natural language processing of a corpus of electronic documents, obtained from one or more source computing systems separate from the data processing system;

generating, by the cognitive system, for each candidate treatment in the set of candidate treatments, a treatment toxicity profile for the candidate treatment by performing natural language processing on electronic documents in the corpus of electronic documents that specify the candidate treatment and corresponding toxicity criteria for the candidate treatment;

determining, by the question answering system, for each candidate treatment, one or more constituent agents of the candidate treatment;

calculating, by a toxicity scoring engine of the cognitive system, for each candidate treatment, a treatment toxicity score based on a comparison of patient medical attributes of the specified patient to toxicity criteria associated with the one or more constituent agents identified in the treatment toxicity profile for the candidate treatment;

identifying, by the question answering system, in the patient medical attributes, patient preference information indicating at least one of symptoms of toxicity or one or more levels of treatment toxicity scores the specified patient is willing to tolerate, in comparison to a probability of beneficial result of a corresponding treatment;

modifying, by the toxicity scoring engine, the treatment toxicity score for at least one candidate treatment based on a correlation of at least one of symptoms of the candidate treatment or [[a]] the treatment toxicity score with the patient preference information;

selecting, by the question answering system, at least one candidate treatment as a treatment recommendation for treating the medical malady of the specified patient based on treatment

> toxicity scores for each candidate treatment in the set of candidate treatments; and

>> outputting, by the question answering system to a user computing device, a notification of the treatment recommendation.

*See* Response to Final Office Action dated Aug. 18, 2016 (amending the claims after-final); and Advisory Action dated Sept. 8, 2016 (entering the amendment); *see also* Miscellaneous Internal Document dated Sept. 8, 2016 (initialing amended claims with instructions to enter).[3]

The following rejection is appealed:

Claims 1–5, 9–15, and 19–22 are rejected under 35 U.S.C. § 101 as directed to an abstract idea without significantly more so as to provide an inventive concept. Answer 2.

## DISCUSSION

"[T]he examiner bears the initial burden . . . of presenting a *prima facie* case of unpatentability. If that burden is met, the burden of coming forward with evidence or argument shifts to the applicant." *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). We have considered those arguments

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[3] Appellants' Appeal Brief does not include a Claims Appendix listing the claims on appeal. Instead, Appellants submitted with their Appeal Brief "an After Final Amendment," which proposed further amendments to the claims, in addition to those made by Appellants on August 18, 2016 after the Final Rejection and entered by the Examiner on September 8, 2016. *See* Appeal Br. 7. The Examiner did not enter these newly proposed amendments to the claims, but also did not object to the Appeal Brief as improper, which it was, for lacking a listing of the claims on appeal. *See* Advisory action dated Nov. 21, 2016; 37 C.F.R. § 41.37(c)(1)(v) and (c)(2). Therefore, we conclude the claims on appeal are those submitted by Appellants on August 18, 2016, and entered by the Examiner on September 8, 2016.

made by Appellants in the Appeal Brief and properly presented in the Reply

Brief; arguments not so presented in the Briefs are waived. *See* 37 C.F.R.

§ 41.37(c)(1)(iv) (2015); *see also Ex parte Borden*, 93 USPQ2d 1473, 1474

(BPAI 2010) (informative) ("Any bases for asserting error, whether factual

or legal, that are not raised in the principal brief are waived.").

"Phenomena of nature, though just discovered, mental processes, and

abstract intellectual concepts are not patentable, as they are the basic tools of

scientific and technological work." *Mayo Collaborative Servs. v.

Prometheus Labs., Inc.*, 566 U.S. 66, 71 (2012) (quoting *Gottschalk v.

Benson*, 409 U.S. 63, 67 (1972)). Claims directed to *nothing more* than

abstract ideas (such as mathematical algorithms), natural phenomena, and

laws of nature are not eligible for patent protection. *Diamond v. Diehr*, 450

U.S. 175, 185 (1981); *accord* MPEP § 2106 (II) (discussing *Diehr*).

In analyzing patent-eligibility questions under the judicial exception

to 35 U.S.C. § 101, the Supreme Court instructs us to "first determine

whether the claims at issue are directed to a patent-ineligible concept." *Alice

Corp. Pty. Ltd. v. CLS Bank Int'l*, 573 U.S. 208, 218 (2014). If the claims

are determined to be directed to an ineligible concept we then move to a

second step and "consider the elements of each claim both individually and

'as an ordered combination' to determine whether the additional elements

'transform the nature of the claim' into a patent-eligible application." *Id.* at

217 (quoting *Mayo*, 566 U.S. at 97).

In addition to this direction by the Supreme Court, the PTO recently

published revised guidance on the application of § 101. USPTO's January

7, 2019 Memorandum, *2019 Revised Patent Subject Matter Eligibility*

*Guidance* ("2019 Guidance Memorandum"). Under this guidance, in step
one of the *Mayo/Alice* framework, we first look to whether the claim recites:

> (1) any judicial exceptions, including certain groupings of
> abstract ideas (i.e., mathematical concepts, certain methods of
> organizing human interactions such as a fundamental economic
> practice, or mental processes); and

> (2) additional elements that integrate the judicial exception into
> a practical application (*see* MPEP § 2106.05(a)-(c), (e)-(h)).

Furthermore, under the guidance, regarding step two of the *Mayo/Alice*
framework, only if a claim is determined to (1) recite a judicial exception
and (2) not integrate that exception into a practical application, do we then
look to whether the claim:

> (3) adds a specific limitation beyond the judicial exception that
> are not "well-understood, routine, conventional" in the field (*see*
> MPEP § 2106.05(d)); or

> (4) simply appends well-understood, routine, conventional
> activities previously known to the industry, specified at a high
> level of generality, to the judicial exception.

*STEP 1, PRONG 1*

The 2019 Guidance Memorandum identifies three key concepts
identified as abstract ideas:

> (a) mathematical concepts including "mathematical
> relationships, mathematical formulas or equations, mathematical
> calculations"; (b) certain methods of organizing human activity,
> such as "fundamental economic principles or practices,"
> "commercial or legal interactions," and "managing personal
> behavior or relationships or interactions between people"; and
> (c) mental processes including "observation, evaluation,
> judgment, [and] opinion."

The Examiner determined that the claimed methods and products were similar to the mental processes a doctor would follow and ultimately found the claims to be directed to "the abstract idea[] of . . . *a mental process*." Answer 3 (emphasis added) (citing *In re Meyer*, 688 F.2d 789 (CCPA 1982); *SmartGene Inc. v Advanced Biological Labs.*, 555 Fed. Appx. 950 (Fed. Cir. 2014); *Classen Immunotherapies Inc. v. Biogen IDEC*, 659 F.3d 1057 (Fed. Cir. 2011); *PerkinElmer Inc. v Intema Ltd.*, 496 Fed. Appx. 65 (Fed. Cir. 2012); and *In re Grams*, 888 F.2d 835 (Fed. Cir. 1989)).

The Federal Circuit has "recognize[d] that defining the precise abstract idea of patent claims in many cases is far from a 'straightforward' exercise." *Synopsys, Inc. v. Mentor Graphics Corp.*, 839 F.3d 1138, 1150 (Fed. Cir. 2016) (quoting *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1257 (Fed. Cir. 2014)). However, "we continue to 'treat[ ] analyzing information by steps people [could] go through in their minds, or by mathematical algorithms, without more, as essentially mental processes within the abstract-idea category.'" *Id.* at 1146–47 (quoting *Electric Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1354 (Fed. Cir. 2016) (citations omitted)). The Federal Circuit has recognized that "a claim for a *new* abstract idea is still an abstract idea." *Id.* at 1151.

As determined by the Examiner, the invention here is software or programming, which is necessarily a mathematical relationship/calculation. Moreover, the invention is medical advice software that takes data on a patient's condition and data on relevant treatments into consideration, along with data on the adverse effects (toxicity) of such treatments and data on how such toxicity might impact the patient considering data on that patient's

specific traits (tolerance). Based on this related data, the software performs calculations and recommends a treatment.

This is, essentially, providing a task-focused, computerized doctor and amounts to a mental process (e.g., concepts performed in the human mind (including an observation, evaluation, judgment, opinion)). As noted above, the claims recite the following steps, which are essentially directed to such a mental process:

> receiving, by a question answering system of the cognitive system, an input question specifying the medical malady of the specified patient and requesting a treatment recommendation for the medical malady;
>
> generating, by the question answering system of the cognitive system, a set of candidate treatments for the medical malady based on a natural language processing of a corpus of electronic documents, obtained from one or more source computing systems separate from the data processing system;
>
> generating, by the cognitive system, for each candidate treatment in the set of candidate treatments, a treatment toxicity profile for the candidate treatment by performing natural language processing on electronic documents in the corpus of electronic documents that specify the candidate treatment and corresponding toxicity criteria for the candidate treatment;
>
> determining, by the question answering system, for each candidate treatment, one or more constituent agents of the candidate treatment;
>
> calculating, by a toxicity scoring engine of the cognitive system, for each candidate treatment, a treatment toxicity score based on a comparison of patient medical attributes of the specified patient to toxicity criteria associated with the one or more constituent agents identified in the treatment toxicity profile for the candidate treatment;

identifying, by the question answering system, in the patient medical attributes, patient preference information indicating at least one of symptoms of toxicity or one or more levels of treatment toxicity scores the specified patient is willing to tolerate, in comparison to a probability of beneficial result of a corresponding treatment;

modifying, by the toxicity scoring engine, the treatment toxicity score for at least one candidate treatment based on a correlation of at least one of symptoms of the candidate treatment or the treatment toxicity score with the patient preference information;

selecting, by the question answering system, at least one candidate treatment as a treatment recommendation for treating the medical malady of the specified patient based on treatment toxicity scores for each candidate treatment in the set of candidate treatments; and

outputting, by the question answering system to a user computing device, a notification of the treatment recommendation.

*See* Response to Final Office Action dated Aug. 18, 2016. It is well-established that mental processes are abstract ideas. *CyberSource* instructs that "a method that can be performed by human thought alone is merely an abstract idea and is not patent-eligible under § 101." *CyberSource Corp.* v. *Retail Decisions, Inc.*, 654 F.3d 1366, 1373, 1375 (Fed. Cir. 2011) ("That purely mental processes can be unpatentable, even when performed by a computer, was precisely the holding of the Supreme Court in *Gottschalk v. Benson*."). As stated in the Specification, "[t]he end goal of the QA system is to provide answers to questions directed to treatments for diseases and maladies that identify the best treatment that the particular patient can tolerate taking into account the toxicities of the treatments and comorbidities

and other conditions." Spec. ¶ 21. This is precisely what a doctor would consider, in their mind, going through the claimed steps, when determining which treatments to recommend to a patient.

Thus, we conclude the claims are directed to a mental process, which is an abstract idea.

Appellants argue the claims are not directed to an abstract idea for several reasons. *See* Appeal Br. 9–27. Appellants argue their intent was to claim an invention encompassing the specific computer environment implementation of the claimed method, not some abstract idea performable in the human mind or some mathematical principle. *Id.* 9–10. Appellants also argue their claims recite specific, non-generic computing elements. *Id.* These arguments are not persuasive.

Appellants' intentions are not determinative. *See, e.g., SmartGene,* 555 Fed. Appx. at 954–955 ("Claim 1 does no more than call on a "computing device," with basic functionality for comparing stored and input data and rules, to do what doctors do routinely. . . . Like the processes claimed in *Benson,* the process of claim 1 'can be . . . performed without a computer' or, alternatively, 'can be carried out in existing computers long in use, no new machinery being necessary.' 409 U.S. at 67, 93 S.Ct. 253. . . . Whatever the boundaries of the 'abstract ideas' category, the claim at issue here involves a mental process excluded from section 101: the mental steps of comparing new and stored information and using rules to identify medical options.") Furthermore, the claims are directed to software running on an undefined computer system having a processor and memory, programmed with the software. That Appellants give names to software

modules/programs, e.g., question answering (QA) system or cognitive system, does not make a computer with such programming or the software itself a non-generic computer component or a specific computer environment. Nothing in Appellants' claims or Specification defines the recited software as providing a specific improvement to computer technology, rather, it is mere programming for an algorithm to access and rank data in a rational manner to address medical patients' therapy inquiries, run by a processor. *See* Spec. ¶¶ 16–19, 21, 31–41, 63, 64, Figures 1 and 2.

Moreover, Appellants' Specification describes the invention in terms of using "a QA system," not in terms of a new or improved QA system. *See, e.g.*, Spec. ¶¶ 17, 42, 46, 50. Thus, even were a QA system to be considered a non-generic computer element (which it is not), the claims merely utilize or operate within such a thing, they do not create it or improve it. And, the Specification never describes or explains what a cognitive system, as claimed, is. *See generally* Spec. We understand this term to refer to how a computer system or computer network, in some way, mimics human thinking or intelligence. Thus, a cognitive system is not a non-generic computer element, but is a way computers operate under programming. These are not physical elements, as argued by Appellants, but are a part of the software programming directed to the abstract idea identified above.

Appellants argue their claimed invention is directed to a specific implementation tied to a specific computing environment. Appeal Br. 12. Further, Appellants argue "the claim is specifically directed to solving a problem within a computing environment using specifically configured computing elements, where the operations recited in the present independent

claims cannot be performed outside the specifically configured computing environment." *Id.* at 15. This is not persuasive.

While the claimed invention is applicable to the medical field, it is not tied to any special computing environment. To the contrary, the claims recite no such special environment and the Specification describes the uses to which the invention is put and the computer systems upon which the invention operates in only the most general ways. *See, e.g.,* Spec. ¶¶ 4–6, 31–41, 53, 63–68, Figures 1, 2.

The Federal Circuit has established that collecting, classifying, storing, and organizing data, regardless of whether such data manipulations are limited to a particular technological environment, is an abstract idea and, without more (which cannot be provided by generic components or steps used in their routine and customary ways), is not patent eligible. *See, e.g., Interval Licensing LLC v. AOL, Inc.,* 896 F.3d 1335 (Fed. Cir. 2018) (claims directed to manipulating data for selective display using routine and conventional instructions/programming not patent-eligible); *SAP America, Inc. v. Investpic, LLC,* 890 F.3d 1016, 1018 (Fed. Cir. 2018) (claims directed to "nothing but a series of mathematical calculations based on selected information and the presentation of the results of those calculations" is merely an advancement in an abstract idea and patent-ineligible, even though physical things like databases and processors are claimed); *In re TLI Communications LLC Patent Litigation,* 823 F.3d 607 (Fed. Cir. 2016) (collecting and organizing data in the form of digital images is abstract and patent ineligible, and using computer systems in their generic ways do not add an inventive concept); *Content Extraction and Transmission LLC v.*

*Wells Fargo Bank, Nat'l Ass'n*, 776 F.3d 1343 (Fed. Cir. 2014) (extracting data from documents, recognizing information therefrom, and storing the information is abstract).

Appellants also argue "the claim is not attempting to pre-empt the calculation of toxicity scores and thus, is not 'drawn to' an abstract idea." Appeal Br. 18. This argument is also not persuasive.

It is well-established that, "[w]hile preemption may signal patent ineligible subject matter, the absence of complete preemption does not demonstrate patent eligibility." *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1379 (Fed. Cir. 2015). "Where a patent's claims are deemed only to disclose patent ineligible subject matter under the *Mayo* [*Alice*] framework, as they are in this case, preemption concerns are fully addressed and made moot." *Id.*

Appellants argue the facts here are analogous to those of *Enfish* and *McRO*. Appeal Br. 19 (citing *Enfish, LLC v. Microsoft Corp.*, 822 F. 3d 1327 (Fed. Cir. 2016); *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299 (Fed. Cir. 2016)). This is not persuasive.

Unlike *Enfish*, where the Federal Circuit found the claims to be patent-eligible as directed to an improvement in how computers function, here, although the claims are directed, essentially, to software, they are not "directed to a specific implementation of a solution to a problem in the software arts," as were the claims in *Enfish*. *See Enfish*, 822 F.3d at 1339. Appellants' invention does not improve how software functions on a computer, nor is it even a new type of software (QA systems were well-known and routinely used in commercial products), but is merely software

running a different set of rules (an algorithm) for how to manipulate data, that data being medical information.

In *McRO*, the Federal Circuit held claims that "set out meaningful requirement for [a] first set of rules" by which a computer could synchronize animated lip movements to spoken sounds, as a whole, were directed to "a process specifically designed to achieve an improved technological result," that result being a computer-generated animation having automatically synchronized mouth movements, and were not directed to an abstract idea. *McRO*, 837 F.3d at 1316. Here, we have none of the claimed specificity of technological improvement the Federal Circuit found present in the invention of *McRO*. Also, contrary to *McRO*, where the ultimate product produced is a synchronized computer animation, here the result of the claimed method or the output of the claimed product is advice or a response to an inquiry based on data.

Appellants argue:

> While the general concept of providing a treatment recommendation to a patient may be old and well known, Appellants' claims are not directed to the general concept of providing a treatment recommendation to a patient. This may be an ultimate output that is generated by the claimed invention, i.e. "outputting, by the question answering system to a user computing device, a notification of the treatment recommendation," but this is not the entirety of what is claimed in the present claims.

Appeal Br. 25. This statement may be correct in that the appealed claims do not just require a type of output, but this is not persuasive. Appellants' claims are directed to providing treatment recommendations, based on data; they provide a treatment recommendation by using known data about a

patient with a condition and treatments, ranking the data, correlating it, and organizing it. This is a subset of the mental steps a doctor would undertake for the same task, which is an old and well-known concept.

In view of the above, we conclude the claims are directed to an abstract idea, that is "a mental process," or put another way, a task-focused, computerized mind of a doctor amounting to a mental process (e.g., concepts performed in the human mind (including an observation, evaluation, judgment, opinion)).

STEP 1, PRONG 2

We next consider whether the claimed treatment recommendation method/system includes additional elements that integrate the abstract idea into a practical application. Determining that the claimed abstract idea is integrated into a practical application requires identifying an additional element or a combination of additional elements in the claim to apply, rely on, or use the judicial exception in a manner that imposes a meaningful limit on the judicial exception, such that the claim is more than a drafting effort designed to monopolize the exception.

Here, there is no practical integration of the abstract idea, rather, there is simply usage of a generic computer to implement the abstract idea in the technical field of medicine. *See* Spec. ¶¶ 4–6, 31–41, 53, 63–68, Figures 1, 2, and claim 1 (reciting "a data processing system comprising a processor and a memory"). Other than the limitations directed to the abstract idea, discussed above, the invention is claimed at a very high level of generality. Further, Appellants' Specification does not specify what types of medical conditions or treatments or toxicities are of concern, but generalizes that any

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are applicable, and Appellants' Specification also does not specify what type of computer or system is used or improved by the claimed invention, but again only generalizes that, essentially, any computer technology is useable. *See, e.g.*, Spec. ¶¶ 18, 23, 31–41, 63–68.

For example, as discussed above, the claimed invention is software programming; it does not improve the functioning of a computer; it is not effecting a treatment for a medical condition, but only recommending some treatment; it is not transforming a machine or matter in any way. *See, e.g.*, MPEP § 2106.05(a)–(c). The only "implementations" of the abstract idea, as claimed, are directed to a generic data processing system (programmed with software) and a user computing device (for receiving a notification of treatment). These are generic devices and the claims otherwise recite limitations directed to the abstract idea with an instruction to apply it.

Appellants argue:

> the claimed invention is directed to the technological improvements, in a cognitive system that is specifically configured to provide treatment recommendation outputs for patients, which involve the generating operations that include natural language processing of electronic documents in a corpus of electronic documents specifically to identify candidate treatment recommendations and generate toxicity profiles for these treatment recommendations. Moreover, the claimed invention is directed to the technological improvements of the cognitive system elements that are specifically configured to evaluate the correspondence between patient preference information and toxicity levels or symptoms of the candidate treatments base don't he [*sic*] toxicity profiles so as to identify

> those treatments that should be recommended for treatment of
> the patient.

Appeal Br. 26. This is argument is not persuasive. The Specification does not describe and the claims do not address a technological problem with computers/"cognitive systems" in how treatment options are determined. *See, e.g., Data Engine Tech. LLC v. Google LLC*, 909 F.3d 999, 1008 (Fed. Cir. 2018) (noting the technological problems in computers and prior art electronic spreadsheets, such as that the prior art electronic spreadsheets were burdensome and hindered a user's ability to find or access the many commands and features available "undercutting the effectiveness of the computers as a means to review and edit a spreadsheet. . . . This was particularly true for three-dimensional spreadsheets, which allowed users to build spreadsheet workspaces consisting of multiple two-dimensional spreadsheets, further increasing the complexity of using and navigating between multiple spreadsheets.").

Thus, we do not ascertain any "technological improvements." Merely calling something a "technological improvement" does not make it so. And Appellants have not explained how "the natural language processing of electronic documents in a corpus of electronic documents specifically to identify candidate treatment recommendations and generate toxicity profiles for these treatment recommendations" is a technological improvement to the cognitive system. *Cf. Data Engine Tech*, 909 F.3d at 1008 ("The Tab Patents solved this known technological problem in computers in a particular way—by providing a highly intuitive, user-friendly interface with familiar notebook tabs for navigating the three-dimensional worksheet environment. . . . The improvement allowed computers, for the first time, to

provide rapid access to and processing of information in different spreadsheets, as well as easy navigation in three-dimensional spreadsheets. . . . Representative claim 12 recites precisely this technical solution and improvement in computer spreadsheet functionality.").

Nor have Appellants explained the specific configuration of the cognitive system elements that "evaluate the correspondence between patient preference information and toxicity levels or symptoms of the candidate treatments [based on the] toxicity profiles so as to identify those treatments that should be recommended for treatment of the patient" and are a technological improvement over the prior art. *See id.* at 1009 (describing the technological improvement in the improved display interface involved in *Core Wireless Licensing S.A.R.L. v. LG Elecs., Inc.*, 880 F.3d 1356, 1359 (Fed. Cir. 2018), namely "[b]y displaying only a limited list of common functions and data from which to choose, the invention spared users from time-consuming operations of navigating to, opening up, and then navigating within, each separate application.").

Moreover, tying the claimed software to medical recommendations or a computer environment, i.e., a technical field, without more, is not a practical implementation of the abstract idea. *See, e.g.,* MPEP § 2106.05(h); *see also Parker v. Flook,* 437 U.S. 584, 588–90 (1978) (limiting an abstract idea to one field of use or adding token post-solution components did not make the concept patentable).

STEP 2 – INVENTIVE CONCEPT

Turning to step two of the *Mayo/Alice* framework, we are not persuaded that the Examiner erred in determining that the elements of claim

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1, considering all elements both individually and in combination, do not amount to significantly more than the abstract idea of "*a mental process.*" Looking at claim 1, for example, we ask what more is claimed once we exclude the limitations directed to the abstract idea and, what we find is, essentially, nothing. The receiving, generating, determining, calculating, identifying, modifying, and selecting limitations of claim 1, discussed above, are each and all directed to the abstract idea. Once removed from consideration we are left with the data processing system with a processor and memory of the preamble and the user computing device to which this system outputs a notification, which are generic computer components.

Appellants make the argument that the operations set forth in the claims cannot be performed by a general purpose computer. Appeal Br. 28. This argument is not supported, and is in conflict with, the description in Appellants' Specification, which explicitly describes the computer systems that can be programmed to perform the claimed method in the most general of ways, e.g., an operating system running Microsoft® Windows®, a server running LINUX®, a system with a plurality of processors or a single processor, and a computer system having a main memory and ROM and peripheral devices. Spec. ¶¶ 63–68. Appellants argue that such a system would have to be specially configured, but the only such special configuration described in the Specification is the claimed programming, which is directed to the abstract idea identified above.

Appellants argue the facts here are analogous to those of *Bascom*, where claims were held to be patent eligible. Appeal Br. 30 (citing *Bascom*

*Global Internet Serv., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341 (Fed. Cir. 2016)). This argument is not persuasive.

Unlike *Bascom*, where the claims provided a software solution applicable to solve a problem specific to the software-based environment of the internet, the claims here are directed to a computer-based medical advisor, which would serve as a task-focused stand-in for a medical doctor and would perform the same mental processes as such a person. *See Bascom*, 827 F.3d 1343–45, 1350–51. While undeniably useful, such an advice generator is not patent-eligible as it is purely an abstract idea and the claims simply append well-understood, routine, conventional activities/components previously known to the industry, specified at a high level of generality, to the judicial exception.

## SUMMARY

The rejection of the claims as directed to patent-ineligible subject matter is affirmed. Appellants argued the claims as a group, therefore, all claims fall with claim 1.

## TIME PERIOD FOR RESPONSE

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

## AFFIRMED